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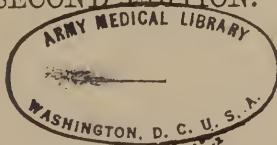
BY

shambez arshall
I. J. M. GOSS, A.M., M.D.,

PROFESSOR OF THE PRACTICE OF MEDICINE IN THE ECLECTIC MEDICAL COLLEGE
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PREFACE.

When I was elected several years ago to the chair which I now occupy, I could find no work on the Theory and Practice of Medicine or SPECIAL THERAPEUTICS, which gave the pathological indications for remedies, except those written by Homœopaths. I have therefore been induced to attempt the preparation of a work with special reference to that much needed feature; and I leave it to the reading physician to decide how well or how poorly I have succeeded in this particular requisition.

I claim nothing new in pathology. I acknowledge my indebtedness to the recent works of Raue, Green, Virchow, Vogel, Hasse, Simon, Bamberger, Niemeyer, Wagner, Koch, Skoda, Hebra, Hale, Da Costa, Bryan, Hammond, Wood, Bartholow, and others, from whom I have extracted, whenever it has suited me to consult them upon any difficult pathological question. And while I have been educated in the Universities of Georgia and Philadelphia, and was first taught the time honored system of Paracelsus, I have not allowed exclusive dogmas to govern my judgment either in practice or theory. I have tried to steer between extremes on all sides; and have given that treatment for diseases which I have found successful by experience.

I do not pretend that this volume is a perfect exposition of the science and art of *healing*, but an humble attempt to add something to the long accumulated fund of medical knowledge. For many years, as epidemic visitations have occurred under my observation, I have noticed that the old method of treating diseases by name was quite unsuccessful, and that it required a special recognition of existing pathological peculiarities, and of special remedies to meet these several indications. The remedies required in one epidemic will not produce the same effects in another epidemic of the same disease, hence the necessity for special pathological indications for certain remedies.

I have generally given remedies singly for a pathological condition, or in some cases, alternated two or three remedies at one time.* This will be objected to by some, until they study disease and remedies closely, when they will see the propriety and necessity for this plan of treating diseases. I have generally given a smaller dose than most writers recommend, and this is in accordance with forty years, experience in the healing art. So too

*See the Author's New Remedies.

I use the saturated tinctures or fluid extracts, as being most uniform in strength, and of course, the most certain in action. As regards the dose, there can be no certain rules laid down. I have found that medicines produce their therapeutical effect in doses short of those causing their toxical effect; and that it is not always that any certain dose is absolutely required to produce curative effects, but that medicines, having a specific affinity for certain parts or organs, will act upon said organs, tissues or parts, in a given away in therapeutic doses, but quite differently generally, in toxical doses. I have seen medicines cure diseases in various sized doses, provided the dose was below that required to produce the toxical effect. This volume does not teach a dogmatical proscriptive system of therapeutics, but the author aims to add his experience to that of other honest laborers in the field of medical science. I claim that I here give a guide, imperfect though it be, to the administration of remedies that will greatly aid the practitioner in selecting his remedies in each case, if he studies pathology well.

There is much wrangling among medical men in regard to the "*law of cure.*" Such has been the zeal with which some men have advocated their own cherished theory upon this subject, that they have been induced to discard and abuse all who differed from them. But it is now apparent to all sound pathologists, that there can never be a "*System of cure in medicine,*" that is, there cannot be a definite law by which all medicines shall act, but each remedy acts according to its own peculiar law. Some after the law of "*Similia Similibus Curantur,*" and others upon the law of "*Contraria Contrariis Curantur, or Opponenda.*" No remedy should ever be given until the pathological indications calling for it, is well understood and pointed out by the symptoms in the case. The action of our remedies must be well understood, or we have no right to prescribe them; and if we prescribe remedies *routinely* which we do not understand well, we are *quacks*. *Every man is a quack who gives a remedy without knowing why he gives it, no matter what is his "pathy."*

THE AUTHOR.

INTRODUCTION.

The definite action of medicine is denied by a large majority of the physicians of Europe and America; and this denial has originated solely from the fact that we have hitherto ignored the pathological indications for our remedies. Furthermore, we have not singly tested (*proven*) our remedies, so as to get the precise affinity of each one, together with the remedial effects. The old rule of treating diseases by name, regardless of any pathological indications for the *specific* remedy, has been a blighting curse to humanity, and in this era of light and advancing science should be abandoned, with other relics of ignorance and blind-guessing. The mortality tables show how very unsuccessful this old *routine* plan of treating diseases has proven. And the sad results following this unscientific method in practice, should induce every man to investigate for himself, and try the more rational practice, based upon pathology. Some of the leading men of England, such as Ringer, and a few in America, such as Bartholow, acknowledge the fact that some of the remedies now used according to their pathological indications, are invaluable, *viz*: belladonna, for congestion of the venous capillaries; aconite, for an excited heart with fever, etc.; but neither of them have given us the "*specific*" use of our other remedial agents. They do not mention the curative effects of baptisia in a septic diathesis; æsculus in hæmorrhoids; hamamelis in varicosus; apocynum canab. in dropsy; convallaria and cactus in hypertrophy and valvular insufficiency of the heart; actæa rac. in lithic acid diathesis; chionanthus in jaundice; oil of pepo in hæmorrhoids (this remedy has lately been suggested to me as a specific in piles, by Dr. M. A. Baldwin, of Cuthbert, Ga.); lycopus in hæmorrhage of the lungs; coto bark and mangifera indica in chronic diarrhœa; rhamus purschiana in constipation; kava-kava in urethral inflammation; ipecac and euphorbia in the vomiting and purging of cholera infantum and cholera morbus; small doses of tincture of colocynth in colic; small doses of podophyllum in dysentery and summer complaint; nor do they even acknowledge the general law of *affinity* of remedies for organs and tissues.

By the *specific application* of our remedies in accordance with their *specific affinity*, and the pathological indications calling for them, we do not mean to say, that a certain remedy will cure all cases of a certain disease. We deny the old dogma, that groups diseases by name, into certain classes, and prescribes for them

merely by name, regardless of pathology. Disease may consist of one pathological deviation from a normal state, and be met by one remedy, or it may, and often does, consist of many pathological deviations from health, each of which abnormal deviations will demand a "*specific*" agent to correct it. If there are various lesions in a case, dependent upon one first lesion as a cause, then the relief of the first lesion may be followed by relief of all the lesions in the case.

It is clear then that we must be thoroughly versed in the precise action of our remedies, and in the pathological indications calling for them. We must know in what our lesion consists, that is: whether it be excess of action, deficiency of action, or a mere perverted action. Without this knowledge all our prescribing is done in the dark—it is unmitigated *quackery*. Our diagnosis must not be based upon the old generalization, or *genus* of disease, but upon a clear knowledge of the various pathological peculiarities pointed out by the symptoms in each case. This is the only way to treat disease successfully in general. We do not say that by this method it is possible to reach absolute success in every case, that is an utter impossibility, but we simply say that this method is a much nearer approach to general success than the old guessing system of the past. This is the distinguishing peculiarity of that class of physicians called "*Eclectic*;" but there are many who sail under this title who are really utterly unacquainted with the principles of modern "*Eclectism*." We do not assert that there is any one law by which all our remedies act, but that remedies act upon their own law. "And all physicians should prove all things, and hold to the good."

What is the difference between this pathological system of practice and the homœopathic system of practice?

Although we acknowledge the dual action in a great many remedies, such as ipecacuanha, curing dysentery and vomiting under certain pathological conditions; podophyllum in dysentery and certain forms of diarrhœa; ergot in arresting threatened abortion, and some other similiar instances of the dual action of our remedies, yet we do not say that all remedies thus act, nor do we hold the dogma of the infinitesimal dilution of remedies increasing their action. This is a very material difference. We believe that there is a *specific* affinity of certain remedies for certain organs or tissues, and that a certain drug has a certain action upon an organ or tissue in a given dose, but that action is changed by greatly increasing the quantity. Its action may be quite different under different pathological conditions. We are also convinced that there are pathogenetic powers in our remedies, hence the necessity for small dose. While we regard symptoms as a *guide* to diagnosis, we are well satisfied that it will not do as a *rule* in diagnosis.

For instance, we regard a great many diseases as of germ origin, as diphtheria, catarrh, phthisis, fevers, and many others; hence it will not do to confine our treatment to the mere febrile element or manifestation of these disease; but we must meet the first morbid cause of the organic or functional disturbance. There is a certain septic element in the blood that causes many diseases, as typhus, and typhoid fever, cholera, yellow fever, remittent and intermittent fever; here our remedies must be selected to meet this septic element, instead of the mere febrile manifestations, and after removing this septic condition, then the mere lesions may be easily met. We also oppose the old hobby of prescribing mercurials in disease. But some members of our school admit that the biniodide of mercury, with iodide of potassium added, so as to prevent constitutional injury, may do good service; others deny even that, and ignore mercurials entirely. We do not deny but that the dual action of our remedies does furnish the key to scientific therapeutics. Each case should be carefully examined, and the peculiar pathological condition made out, then the remedy (in its medical, and not letheal dose) prescribed in sufficient quantity to meet the indication according to the expression of the grouped symptoms. In many cases, there doubtless is a similarity between the drug's pathogenesis and the morbid elements of the disease to be met by the drug. And we admit the fact that the empiric use of remedies has been followed by success in many cases, simply from the fact that they were prescribed from the knowledge of their affinity for certain organs and tissues. There must be a relationship between the diseased or morbid condition—the pathological lesion, and the remedy. Haller's law of cure prevails in most cases, but Hahneman's chimera in regard to dynamization of medicines belongs to the old superstitions that clung to medicine in the bygone ages, and not to science.

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GENERAL REMARKS UPON THE LEADING AND MOST PROMINENT SYMPTOMS OF DISEASE.

THE PULSE.—The pulse is produced by the expulsion of the blood from the heart through the aorta, and thence into the various arteries of the body, by each contraction of the left ventricle of the heart, and by the innate contractility of the arterial walls. Hence the character of the pulse will be modified by the condition of the heart and also by that of the blood-vessels, and of the blood itself. Gentleness should be observed in feeling the pulse, so as not to excite the action of the heart, especially in children and nervous persons. In ordinary cases, the pulse may be examined at the wrist. In examining the pulse, the pressure upon the artery must be very gentle, and must be made by three fingers.

The frequency of the pulse may be measured by the second hand of a watch, and its peculiar characteristics, as indicating diseased conditions, can only be appreciated by the *educated hand* of the careful examiner. Its rhythm, its fulness, or its softness should be noted; whether compressible, strong, bounding, hard, soft, or small and wiry, intermittent, or regular in beat. The healthy pulse is uniform, equal and moderately full, and swells slowly under the fingers; it is smaller and quicker in children, and ordinarily also in women. In old age there is a structural change in the arterial coats, and hence, the pulse becomes somewhat harder than in the young and vigorous.

In health, the average number of pulse beats in a minute, at different ages, is as follows: at birth, 140; during infancy, 120 to 130; in childhood, 100; in youth, 90; in adult age, 70 to 72; in old age, 65 to 70; in decrepitude, 75 to 80. It is quickened by exertion or excitement; it is more frequent in the morning, and just after meals; it is somewhat faster when standing than when sitting, and in sitting than lying; but is retarded by sleep, cold, fatigue, hunger, and by arterial sedatives, such as digitalis or veratrum.

A rapid pulse, especially when it is strong, full and hard, indicates fever or inflammation; if very rapid and small, it indicates debility or depression, as is the case frequently in enteric fever. A jerking pulse, with quick and forcible beat, followed by abrupt cessation for one or two beats, indicates structural lesion of the valves of the heart. The pulse may, however, be intermittent, owing to obstruction to the circulation of the blood in the heart and lungs, or from softening of the brain, or from inflammation

of the brain, or from apoplexy. Hernia, enteritis, and gangrene of the intestines may produce intermittency in the pulse, so may it also be produced by prolonged or over exertion, watching, want of rest or sleep, and anxiety. Indigestion with flatulence may produce it in a less marked degree. A weak pulse indicates impoverished blood and debility, and a full pulse denotes plethora, or the early stage of acute disease.

THE TEMPERATURE OF THE BODY.—The normal temperature of sheltered parts of the body is 98.4° or a few tenths more or less, and a persistent rising above 99.5° or a fall below 97.3° are indications of a diseased condition. A normal temperature gives assurance of the absence of anything except local and very trifling disturbances of health; but any very acute disease very soon elevates the temperature above the normal standard. By the clinical thermometer we readily diagnose between an inflammatory and a non-inflammatory form of disease, and the thermometer helps us to determine the intensity of the inflammation, by the number of degrees the bodily heat rises above the normal standard. Hysteria, for instance, often simulates inflammatory disease; temperature in hysteria, however, is always nearly or quite natural, but never in inflammation. In typhoid fever, the thermometer not only indicates the fever, but also reveals changes that are about to take place in the patient's condition. In consumption, even when other symptoms are obscure, the thermometer will show that the temperature is about 102.3° , or even higher, and the temperature will increase in proportion to the tubercular deposit. This increase of the temperature of the body often exists for several weeks prior to the loss of weight or before the physical signs indicate tubercle in the lungs. In measles, the thermometer is the best means of determining that pneumonia is setting in. In acute rheumatism, if the temperature runs up to 104° , it indicates grave complications.

RESPIRATION.—Healthy inspiration and expiration are performed with ease. An adult breathes about twenty times in a minute. Breathing is quickened by exertion and by disease, especially fevers. Dyspnoea, or difficult breathing, may be the result of loss of lung substance; adventitious deposits in the lungs; formations of false membranes in the air passages, as in croup or diphtheria, in tonsillitis and glossitis, also in asthma, which is a spasm of the muscles of the air tubes. Effusion of fluid into the pleura or pericardium (the serous membranes surrounding the lungs and heart,) causes dyspnoea from compression of the lungs. Organic diseases of the heart, and functional diseases of this organ also cause dyspnoea. Diseases of the nerves of respiration, or their centres, may cause serious dyspnoea. Fracture of a rib, or fracture of several ribs, apoplexy, or great exhaustion, an insuffi-

cient supply of blood to the nerve centre of the brain, all may cause dyspnœa.

THE TONGUE.—The tongue is an important means of diagnosis. A dry tongue indicates diminished secretion, and is common in most acute and febrile diseases; a moist condition of this organ is regarded as a favorable sign, especially when it follows a furred and dry condition. A very red tongue is common in eruptive fevers and in remittent and intermittent fevers, especially when the stomach is involved; it also is indicative of indigestion, in which case the edges are more red. If the tongue is fissured, it indicates typhus or typhoid fever. A purple or livid tongue indicates defective oxygenation of the blood. A heavy fur on the tongue indicates irritation or inflammation of the mucous membranes; it is also common in diseases of the brain, in all varieties of fever, and in most acute and dangerous diseases. Tobacco smokers usually have a furred tongue when well. A yellow coat upon the tongue is regarded as an indication of disordered liver; and a brown or black coat denotes a low state of vitality, or contamination of the blood. A tendency to health, after an attack of sickness, is indicated by a gradual cleaning of the tongue, which indicates a clearing up of the intestinal tract. If the tongue becomes a browner, drier and dirtier, each day, the nervous system grows gradually feebler, and the hope of recovery less. When the fur separates in patches, leaving a glossy, red surface, the prospect of recovery is also unfavorable; so too in cases where a crust is rapidly removed. This rule is subject however to exceptions.

PAIN.—A throbbing sensation with pain, and a sensation of tightness is a pulsative pain. A nervous pain generally intermits, or remits. A spasmodic pain is mitigated by pressure, or by friction, and by the application of warmth. Pain from inflammation is constant, attended by a quickened pulse and heat, and is increased by movement of the affected part, or by pressure. Pain occurs sometimes in a part distant from the seat of disease, as when inflammation of the liver gives rise to pain in the right shoulder; so too inflammation of hip-joint may give rise to pain in the knee-joint; stone in the bladder is accompanied by pain in the penis; and disease of the heart gives rise to pain shooting down the left arm.

THE SKIN.—In health, the skin feels moist, elastic, soft, smooth, warm and neither very tense nor loose. A harsh, dry, burning heat of the skin, indicates fever and inflammation. If perspiration takes place, and the improvement is general otherwise, it is a favorable sign. Partial or local perspiration indicates a deranged condition of the nervous system, or an affection of the organs beneath the sweating surface. When perspiration occurs after slight exercise, it indicates great weakness or debility. Night-

sweats occur in debility, in hectic and in consumption, or chronic bronchitis. The color of the skin is also diagnostic. A bluish tint of the skin indicates structural disease of the heart. A yellow color points to biliary affections. A rich blush of the cheeks, especially if it be confined to a limited part, and the surrounding parts remain pale, indicates an irritable condition of the nervous system, or a diseased state of the lungs. The face will often blanch from sudden emotion, and flush from a sudden fit of anger or shame. I have seen persons who were subject to occasional flushes of the face from a morbid state of the capillaries.

THE URINE.—By the healthy activity of the kidneys the blood is relieved of many impurities, which, if retained, would produce disease in some part of the organic structure. Healthy urine is of a yellow or amber color, of slight ammoniacal smell, and precipitates very little, if any, deposit on standing. The average specific gravity in healthy urine is between 1020 and 1025. It presents varieties in disease, and furnishes valuable indications to the physician. In jaundice it is of a dark yellow or saffron color. In fevers it is generally red or high colored, and scanty in quantity. It may be bloody and slimy in affections of the kidneys and bladder. It is pale and copious when less urea is excreted, or when metamorphosis is checked, as in nervous and hysterical affections. It may be heavy, muddy, or of a purple color in some peculiar conditions of the system; or it may be very dark or black, indicating its putridity. In chronic or acute inflammation of the bladder, the urine is passed with more or less pain. Sometimes there is very frequent desire to micturate, with burning and scalding pain in passing the urine, especially the last drop, as in calculus. Diabetic urine is usually pale and copious, and its specific gravity is from 1025 to 1060. In hysteria the specific gravity may be as low as 1007. In rheumatism the urine is usually acid, but in nervous affections it is alkaline.

CHAPTER I.

DISEASES OF THE BLOOD.

As the blood is the life of the body it must necessarily produce great disturbance in the body when this vital fluid becomes changed in its character and composition. In health, the blood consists of serum and two kinds of corpuscles—the red and white. The serum contains water, fibrin, albumen, salts, fatty or oily substances, and extractive materials.

If these constituents be diminished, increased, or altered, it causes an abnormal condition of the blood. This fluid may also be poisoned by the admixture of obnoxious substances, such as uric acid, oxalic acid, ammonium, sulphuretted hydrogen, urates, bile, pus, and even sugar.

Cyanosis.—The blood having a natural affinity for oxygen, absorbs it while it is in contact with the air in the lungs. Any cause that prevents this absorption of oxygen by the blood corpuscles, hinders the transformation of *venous* into *arterial* blood, which causes *cyanosis*. This disease consists in deficiency of oxygen in the blood corpuscles. Its causes are numerous, and may be arranged under various heads as mentioned hereafter.

CAUSES.—It may be the result of imperfect respiration, in consequence of spasms, or œdema, or croup, or inflammation of the larynx and glottis, or any obstacle that may prevent the air from entering the air-cells of the lungs freely. Emphysema, hepatization, hydrothorax, or paralytic affections of the respiratory muscles, or distention of the abdomen with gas or water, so as to impede respiration, may give rise to it. Diseases of the heart may cause it, and so may obstructions within the pulmonary vessels. Immediate transmission of the venous blood into the left ventricle, by non-closure at birth of the foramen ovale, is often the cause of this disease. Irrespirable gases, as carbonic acid gas, may cause cyanosis. Sometimes in typhus fever, cholera, pyæmia and tuberculosis, the blood is so changed that its corpuscles are unable to absorb oxygen.

SYMPTOMS.—Cyanosis is to be distinguished by the bluishness of the skin, especially of the face and lips; coldness of the surface and extremities; sopor; and finally, asphyxia.

TREATMENT.—I find that cactus will give as great relief as any remedy we have, grt. 5 every two or three hours. Collinsonia may alternate. Cyanosis is usually fatal.

Anæmia.—This may be defined as a poverty of the blood, or,

pathologically speaking, it may be defined as a diminution of plastic albuminates, and red corpuscles. That impoverished state of the blood that follows hæmorrhage, from wounds, or otherwise, is not what is meant by true *anæmia*.

CAUSES.—A deficient supply of nourishing food may cause this disease. A want of air and exercise, too high or too low a temperature, excessive loss of semen, too long continued lactation, too profuse menstruation, mental over-work, albuminuria, excessive mucous discharges, diarrhœa, or dysentery, excessive suppuration, infiltrations into the pericardial sac, or into the pleural or peritoneal cavities, malignant growths, malarial infections, certain mineral poisons, such as arsenic and mercury, diseases of the lymphatics and spleen may all cause *anæmia*, under certain conditions.

SYMPTOMS.—Paleness of the skin and mucous membranes, dropsical effusion in consequence of deficiency of albumen in the blood, emaciation, marasmus, or atrophy of tissue, a tendency to hæmorrhage, low temperature, dyspnœa, and palpitation of the heart.

TREATMENT.—Fowler's Solution in gtt. $\frac{1}{2}$ doses, or iron in moderate doses, with *helonias dioica*, gtt. 30, three times a day, will generally cure this disease.

Oligocythæmia.—In some diseases more corpuscles die than are generated, in a given time, and this causes a state of the blood which is called *oligocythæmia*. It is characterized by weakness of the muscles; a tired feeling; nervousness; palpitation of the heart, and a murmur in the jugular veins. So rapid is this dissolution of the blood corpuscles in some cases that the blood-serum becomes surcharged with the constituents of the dead corpuscles, and is thus discolored. Sometimes the excretions of the body assume a bloody hue. The skin and mucous membrane may become colored with hæmatin, so as to render it yellowish, creating an appearance of jaundice. The dissolution of blood-corpuscles may be confined to a certain portion of the circulation, and constitute an essential element of *local gangrene*. A general putrid dissolution may take place throughout the system, and produce *general gangrene* or *septicæmia*. This is the case sometimes in scurvy and typhus fever, puerperal fever and yellow fever, and other tropical forms of fever.

TREATMENT.—Baptisia, alternated with gtt. 1 of Fowler's Solution every three hours, are the remedies.

Leukæmia.—Is caused by a great predominance of the white corpuscles, and often occurs in connection with hypertrophy of the spleen, or tumors of the lymphatic glands in general.

SYMPTOMS.—The patient complains of great prostration, dull pains in the splenic region, headache, dizziness in the ears, palpitation of the heart, shortness of breath, with enlargement of the lymphatic glands of the entire body, but especially of the cervical,

jugular, axillar and inguinal regions. There may be tumors of the spleen without leukæmia, and so of the lymphatics.

TREATMENT.—*Thuja oc.*, in doses of gtt., 1 to 2, three times a day, often relieves this disease quickly. The sulphate of sodium in small doses is also a good remedy; dose gr., 1 to 2, three times a day. If there is debility, bad digestion, constipation, or a want of nervous power, then *nux vomica* may be given, in doses of gtt., 1 to 2, three times a day. In some cases gtt., 1 to 2 of arsenic, in the shape of Fowler's solution, has been given with good effect. *Menespermin*, in doses of gr. 1 to 2, may be given with the best effects in many cases. The nitrate of sodium is also a good remedy, dose gr. 1 to 2, three times a day. The acetate of sodium will often answer as well, and in some cases even better. Nitrate of potassium, in 1 to 2 gr. doses, is also a good remedy. The carbonate of lime is a valuable remedy. The phosphate of magnesium is often useful.

Chlorosis.—This is a diminution of hæmoglobin in the blood. The albuminates and leucocytes are not affected, and this fact must be regarded as a pathological distinction between this disease and anæmia. This disease seems to be limited to the female sex, between the fourteenth and twenty-fourth years of age. There may exist a constitutional tendency to this disease.

SYMPTOMS.—Paleness of the skin, which is either clear or yellowish, greenish, or waxy. The lips and mucous membranes are pale, with dark rings around the eyes, œdema of the face, eyelids and feet, decreased temperature, and great sensitiveness to cold. The pulse is slow, compressible and small, and there is generally palpitation of the heart. There is great debility, headache, noises in the ears, pains in the body, especially in the stomach and back, sadness, want of energy, nightmare, sometimes mania.

TREATMENT.—Iron is a valuable remedy, and may be alternated with *helonias dioica*. Arsenic is also indicated in many cases. Hypophosphite of lime, alternated with *nux-vomica*, is useful where the digestion is feeble. *Pulsatilla* in doses of gtt. 5 is required where in females the menstrual flow is deficient, and this may be alternated with *senecio aureus* gtt. 30 to the dose.

Scurvy.—This disease resembles septicæmia, and is very gradually developed. There is general debility, sleeplessness, depression of mind, cachectic face, with blue rings around the eyes, the pulse is slow and soft, and the appetite poor, urine scanty, skin dry and harsh, and frequently constipation. The gums become bluish, swollen, spongy, and generally bleed at the slightest touch. The breath becomes fetid, and there is a bad taste in the mouth. The debility increases, the extremities suffer pain, ecchymosed spots appear on the body or limbs, and finally all over, from the size of a lentil seed to that of half a dollar. At first they

look purple, and in severe cases they are black. Very frequently there is epistaxis, and hæmorrhages from other parts of the body. The debility may become so great that the patient faints upon slight exertion, and there may flow from the gums and mouth a foetid, ichorous, bloody fluid; the ecchymosed spots on the skin may change into blisters, filled with an ichorous fluid and forming ulcers. The pain of the limbs may greatly intensify, and the joints and bones may become enlarged, and an effusion of fibrin take place under the skin. A thin ichorous diarrhœa may set in, with colicky pains. The spleen usually becomes greatly enlarged and often very tender to the touch. There may be hæmorrhage from the kidneys as well as from the nose and bowels. There may also be an extravasation of bloody serum into the pleura, the pericardium, the lungs, or brain or its membranes, and the patient may die suddenly; or slow convalescence may take place and the patient gradually recover his health.

It has been divided into *sea* and *land scurvy*, but there is no essential difference between these two forms of scurvy.

CAUSES.—A want of vegetable food and the exclusive use of salty provisions generally gives rise to this disease; but exposure to damp, cold weather, bad drinking water, rancid meat, depressing mental emotions, fear and anxiety may aid in its development—*ceteris paribus*.

TREATMENT.—Where the skin is pale, the gums swollen and bleeding, dark purple blotches upon the limbs or body, limbs swollen, hard, and painful, with constipation of the bowels, the agave Americana, in the form of an extract, in doses $3\frac{1}{2}$ every two or three hours, has made many cures, and so have lemon juice and vegetables.

Purpura Hæmorrhagica.—This is a sporadic hæmorrhage, of rather a brief duration, the etiology of which is not known. It differs from scurvy in not having any of those affections of the gums that attend scurvy. It may begin suddenly, without any premonitory symptoms. There appear petechiæ upon the skin, or there may be epistaxis. It may commence with rheumatic pains in the legs, especially in the knees and ankles. Hæmorrhagic exanthema may extend over the entire body, which may vary in size from the size of a lentil seed to that of a large pea. There may be vesicles formed out of the circumscribed hæmorrhages into the rete Malpighi from capillary loops of the papillæ of the skin. If a mere cutaneous eruption constitute the disease, it is called *purpura hæmorrhagica*. Hæmorrhage may take place from the mucous membrane of the nose, mouth, stomach, intestines, urethra, bronchi, or from the womb in females.

TREATMENT.—Phosphorus, in tincture, may be required in some cases. Hamamelis is one of our best remedies, and may be given

in doses of gtt. 5 to 10 of the tincture of fluid extract every two hours. Arsenic may be required in some cases.

Scrofula.—Scrofulosis is a peculiar cachexia, which manifests itself in the form of a nutritive disturbance in the skin, mucous membranes, joints, bones, organs of sense, lymphatic glands, and sometimes in other glands, as the submaxillary. The subject may have a large head, coarse features, thick upperlip, broad cheek bones, large abdomen, swollen glands on the neck, and soft flabby muscles, and there may be whiteness of the skin, showing the vessels plainly; redness of the lips and cheeks, languid eyes, flabby appearance of the whole make up of the body. So, too, there may be eruptions on the face, as eczema or impetigo, or porrigo, or tinia. And in some cases lupus may take place. There may be scrofulous conjunctivitis, otitis, or oft occurring coryza, and even bronchitis. It may affect the joints, in the form of *white swellings*, or cause suppurating abscesses, such as caries of the bones and destruction of the capsular ligaments. There may be ostitis or periostitis or necrosis of the bones. The lymphatics generally show the greatest nutritive disturbances. And the cellular tissue may become involved, causing suppuration and abscesses, which progress generally very slowly, and heal with great difficulty, and always leave ugly cicatrices. These glandular abscesses are mostly on the neck. Sometimes the glands are greatly enlarged, but the microscope shows their enlargement to consist of pure hypertrophy of their own cells, and not of any foreign elements. When they inflame and suppurate, they form abscesses which break or else the puriform matter becomes dessicated into a cheesy mass, and may then be transformed into a chalky substance. These chalky substances may so irritate the adjacent tissues, as to give rise to inflammation and suppuration of glands. The most common location of these swollen glands is the neck, especially behind the ears and under the lower jaws. The mesenteric and bronchial glands may also be affected. This disease may be inherited as well as acquired.

TREATMENT.—In children, the alnus rub. in doses of $\frac{1}{2}$ to 15 of the fluid extract or tincture three times a day, alternated with the iodide of barium (as an ointment,) will often make a decided impression on the disease. I have used the syrup of the hypophosphites with fine effect. Cistus canadensis and menispermium, (the tincture,) in doses of $3\frac{1}{2}$ each, three times a day, do good generally. The common black walnut, in the form of a syrup of the leaves, is a valuable remedy. When the bones are attacked, then the chloride of gold, in doses of $\frac{1}{50}$ of a grain, three times a day, may be used, alternated with pot. iod. If it manifests itself upon the skin, the iodide of arsenic, in doses of $\frac{1}{30}$ of a grain, often acts admirably.

CHAPTER II.

FEVERS: THE EXANTHEMATA.

Typhoid Fever.—Enteric fever is a continued, slightly infectious fever, continuing about twenty-eight days and often longer. Its pathological effects are evident in the bowels. It is accompanied with an eruption of a few rose-colored spots on the chest, abdomen or back, with great feebleness, and abdominal pains and tenderness, and almost always with diarrhœa. The diarrhœa increases as the disease advances; the discharges being copious, liquid, putrid, and of a *light-ochre color*.

Typhoid (*τῦφος* and *εἶδος*) signifies like typhus; but while these two forms of fever have many similar symptoms in common, yet typhoid is an entirely different disease, and it is necessary to be able to distinguish one from the other. The nature and cause of these two forms of fever are essentially different.

Enteric fever is regarded as contagious, but less so than typhus. That we may be able to differentiate between them, we should contrast the symptoms of the two fevers. Typhus fever comes on quickly; typhoid fever comes on slowly. Typhus attacks persons at any age; typhoid fever is most common in youth, rarely occurs after forty. In typhus, the eruption is of a *mulberry-color*; comes out in a single crop about the fourth or fifth day, and lasts until the disease terminates. The eruption generally appears upon the extremities, is slightly elevated, and remains after death. In typhoid fever, the eruptions are *rose-colored*, few in number, and generally on the abdomen, occurring in successive crops, which in their turn fade and disappear. In typhus fever the brain is affected, but the bowels are but little, if at all affected, the abdomen being often natural, and the discharges being dark, but never bloody. In typhoid fever the bowels are always affected, and the evacuations are of an ochre-color, and watery, with congestion of the mucous membrane of the bowels: very often there is also hæmorrhage, and the abdomen is tumid and tender to the touch. In typhus, there is a dusky flush on the face and shoulders, and the eyes are injected, and the pupils are contracted generally. In typhoid fever, the expression is bright, with a blush on the cheeks, and the pupils are generally dilated. Typhus runs its course in about fourteen days. Typhoid continues from four weeks to three months, unless it be checked. In typhus, relapses are of rare occurrence. In typhoid, relapses are of frequent occurrence, especially in certain epidemics. In typhus, death occurs from coma or

congestion of the lungs. In typhoid, death may result from asthenia, pneumonia hæmorrhage, or from perforation of the intestines. Typhus generally occurs from over-crowding, and defective ventilation, typhoid from bad drainage, poisoned drinking water, or decaying animal and vegetable matter under certain electrical conditions.

CAUSES.—There is a peculiar poison that produces this form of fever, which has its origin in a certain state of fermentation from bad drainage, or from want of cleanliness about the premises. Anywhere there is filth undergoing fermentation or decomposition, the poison of typhoid fever may be produced, provided the air is in a condition to aid the result. There is a certain state of putrescence in matter, either vegetable or animal, in which this zymotic poison is generated, and its gaseous emanations are borne to us upon the gentle zephyr or in our drinking water, and having, *per se*, an affinity for certain parts of the organization, produce this disease.

SYMPTOMS.—When the poison is not very highly concentrated, there is a period of incubation, varying from eight to ten days, after the expiration of which time the disease comes on slowly and progresses gradually. The patient at first complains of languor and indisposition to move about; is chilly; the limbs and back ache; the appetite fails; there is nausea and sometimes even vomiting; the tongue has a white coating on it; the breath is offensive; the bowels are relaxed; and the pulse is quickened. The symptoms gradually intensify daily, until the patient is seized with a rigor, then more or less fever, severe headache, and great muscular debility. This is the stage of accession, to be followed by the other stages.

During the first week the prominent symptoms are, vascular excitement and nervous oppression, with a bounding pulse, about 90 or 100 per minute, great heat of the surface, thirst, and obscured mental faculties; often delirium at night. The abdomen now enlarges, is resonant upon percussion, and there is pain on pressure, especially in the right *iliac fossa*, where a gurgling sensation is conveyed to the fingers on pressure. About the second week, emaciation and debility become well marked, the flesh wastes away rapidly; the urine is scanty, being loaded with urea from the rapid wasting of the nitrogenized tissues. And about this time diarrhœa sets in, if not before, which is copious in most cases. The discharges are fluid, pale-ochre colored, or of a drab color, with a putrid odor, sometimes flocculent debris in them. The third week the emaciation becomes extreme; the patient lies extended upon his back, sinking toward the foot of the bed. There is generally a bright pinkish flush upon the cheeks; sordes on the lips, gums and teeth; the tongue is dry, brown, or red

and glazed; the urine is often retained from inaction of the bladder; the fæces pass off involuntarily; the patient picks at the bed-clothes, or grasps at black-spots—like flies before his perverted vision, and finally becomes deaf and delirious. In fatal cases, death occurs about this time.

THE ERUPTION.—About the ninth day, or between the seventh and fourteenth day, the eruption begins to appear on the sternum and epigastrium, in the form of rose-colored dots, which are few in number, round, scarcely elevated, and soon fade away into the hue of the skin, to be replaced by another crop, and this continues for some time. Occasionally very minute vesicles appear, looking like drops of sweat (*sudamina*), chiefly on the neck, chest, or over the abdomen.

TEMPERATURE.—The temperature affords very important information in enteric fever, and materially aids the physician in his diagnosis. In this form of specific fever the temperature is gradually elevated, but in others it often abruptly rises. This gradual elevation of temperature is one of the diagnostic symptoms of typhoid fever. The temperature generally reaches 103.5° or 104° about the fourth or fifth day in this form of fever. The rash not occurring before the sixth, or sometimes not until the tenth or twelfth day, the diagnosis is somewhat difficult without noticing this gradual rise of temperature. It is also a means of prognosis. If the temperature varies, that is, if the temperature is low in the morning and attains its maximum degree in the evening at the end of the second week, the attack will prove milder and of shorter duration; and if the temperature falls considerably in the morning, even though the rise may be considerable in the evening, the prognosis may still be favorable. But should the temperature remain continuously high during the second week then the attack will prove long and severe or fatal. One of the first indications of improvement in cases of persistent elevation of temperature is a decline in the morning temperature, notwithstanding the evening elevation may still be considerable. Sudden fall of temperature may result from diarrhœa or hæmorrhage. The decline of temperature in enteric fever is more gradual than that of typhus.

COMPLICATIONS.—Hæmorrhage is one of the complications of enteric fever, and may occur at any period of the attack. If large vessels are involved the hæmorrhage is apt to prove fatal at once, and if it does not it so exhausts the patient that he has no power to bear up against the fever. Diarrhœa also may so exhaust the patient that he cannot long survive. Ulceration of the bowels may progress until the coats of the bowels are perforated and cause fatal peritonitis. This may happen the second or third week, or during tedious and imperfect convalescence. The symptoms of perforation of the bowels are pain and tenderness in the abdomen,

with swelling, nausea and vomiting. Congestion of the lungs is a complication that may occur; so may bronchitis.

TREATMENT.—The treatment for the first few days should be antiseptic. Baptisia, in doses of from 3 to 5 gtt. (of the tincture) should be given every two or three hours. This remedy greatly modifies the disease. Such remedies as aconite and varatrum exercise no influence over the disease in the outset. No remedy will control the fever while the specific poison is affecting the system. Antiseptic treatment should be well carried out at first, not only by giving baptisia internally, but also the sulphite of sodium solution should be used to thoroughly wash the body once or twice a day, tepid, if in cool weather, or cold if in very warm weather. Whenever the brain begins to manifest congestion, by intense headache, or delirium, then drop doses of belladonna should be given every half hour, or 3 or 4 gtt., every two hours until this complication is relieved. If there is great nausea at any time in the attack, ipecac., in doses of one or two drops of a good tincture, should be given every half hour until this trouble is relieved. In cases where there is extreme prostration, phosphoric acid, (diluted) should be used in small doses, say 15 to 30 gtt., in half a glass of water, every two or three hours. Where there is restlessness, sleeplessness, and twitching of the muscles, then scutellarin, in 2 grain doses will relieve that trouble. And if there be slight hæmorrhage from the capillaries, then sulphuric acid should be given, largely diluted in water, say two or three gtt. in a wine glass of water, three or four times a day. Towards the end of the second week, if the tongue becomes of a bright red color, then an emulsion of turpentine may be used, say five gtt., to a drachm of gum or elm mucilage, to be given every two hours.

After the zymotic poison is removed from the blood, by antiseptics, then aconite may be given in small doses, every hour, to control local inflammations, or venous stasis of the blood in the bowels, lungs or brain. I usually add 20 to 30 gtt., to a glass of water, and give a teaspoonfull every half hour, or every hour. Where there is diarrhœa, with meteoristic gurgling of wind in the intestines, and a cadaverous odor about the body, then vegetable charcoal, in doses of 3 to 5 grains in water, every two hours should be given. The patient should have a nourishing diet all through the attack, such as rice water, chicken broth, and if there is rapid loss of strength, boiled milk should be given. In cases of great prostration, with feeble circulation, wine whey should be used as a diet. As soon as convalescence is fully established, the diet may then consist of beef tea or essence, toasted bread, rice and milk, but in small quantities at a time.

Typhus Fever.—Typhus is a specific form of acute fever, very highly infectious and contagious, and generally continues, under

ordinary treatment, from fourteen to twenty-one days. It is attended with a confused lethargic condition of the faculties of the mind, and a peculiar *mulberry-colored* eruption. It is often the result of over-crowding, defective ventilation, and privation, hence called *jail fever*, ship and camp fever.

SYMPTOMS.—The precursory stage is usually short, causing the patient to take to his bed in three or four days. In this it differs from *Enteric or Typhoid fever*. The patient complains of soreness, fatigue, loss of appetite, frontal headache, and disturbed sleep. He is often seized with a chill or rigor, usually succeeded by dry heat of the skin, thirst, quick pulse, dry, white, often tremulous tongue, scanty and high-colored urine, sometimes nausea and vomiting, heavy stupor, great prostration, and muscular pains (*myalgia*), irritability or restlessness, especially towards night, and if sleep occurs it is disturbed by dreams, and unrefreshing to the patient. The patient generally lies prostrate on his back, with a dull and weary expression of the face, his eyes appear heavy, and a dusky color is spread uniformly over his cheeks. In the advanced stage of a severe attack he lies with his eyes shut, or half closed, moaning, and too prostrate to answer questions. If requested to protrude his tongue he does it with an effort, incompletely, and the muscles are trembling and half rigid. The mouth soon becomes dry, sordes form on the lips, gums and tongue, the skin becomes morbidly hot (*calor mordax*) and dry, hearing grows very dull and is sometimes suspended for a time. During the first week the patient complains much of headache, noises in the ears, and finally becomes deaf, the conjunctivæ are injected, the pupils contracted, eyes very sensitive to light and generally closed. He becomes irritable and fretful. And about the eighth or ninth day the mind passes from a state of excitement to one of delirium. This symptom is usually more severe, and appears earlier in persons of cultivated mind than in those of a more common order of intellect. In the cultivated, the delirium may become wild and maniacal, or low and muttering. Sometimes there is *subsultus tendinum*: but in favorable cases this symptom passes off in three or four days. Convalescence may set in suddenly. From the fourteenth to the seventeenth days the patient may fall into a long, deep, quiet sleep, and awake in twelve or sixteen hours quite refreshed. The powers of the mind gradually begin to dawn again, the countenance to assume a more tranquil aspect, sleep becomes natural, and convalescence fully established. Diarrhœa may occur in this disease, but generally the bowels are confined, and the discharges are dark (not *yellow ochre colored* as in *enteric fever*), but may pass involuntarily.

THE PULSE.—The pulse in this fever is very rarely under 100 beats per minute, and very frequently we meet with cases where

it runs up as high as 120, 130, or even to 140 per minute. Where it runs up as high as 140 per minute, in adults, it indicates great danger. As a general rule, the pulse gradually increases in frequency up to the ninth or twelfth day, and in favorable cases, then gradually, or suddenly declines. If the pulse become more and more rapid after the ninth or twelfth day a fatal result may be prognosed. A falling pulse is one of the first and most reliable indications of convalescence, the decreasing temperature is also a reliable indication of amendment. If the pulse becomes slower, stronger and fuller we may know that the patient is convalescent. The fall of the temperature and the decline of the pulse often take place without marked perspiration, or critical diarrhoea, or alteration of the urine, or any very remarkable change otherwise.

THE ERUPTION.—The eruption appears between the fourth and seventh days, and consists of slightly elevated spots, of a mulberry color, which disappear on pressure; they are often scattered and minute, or they may be numerous, and large, and two or more may coalesce. These spots usually appear first on the abdomen, then upon the chest and limbs. These spots remain with some changes of color, until the disease terminates. Pressure will temporarily obliterate these spots the first three days, but after that time they remain indelible, thus distinguishable from spots occurring in enteric fever, which disappear under pressure at any time during their existence. In fatal cases the spots of typhus fever remain after death. There is always a characteristic odor about the typhus patient, and his discharges; it is pungent, ammoniaical, and very offensive.

NERVOUS SYMPTOMS.—The name *typhus* (τῦφος in Greek) was applied on account of the characteristic nervous symptoms. This peculiar poison operates chiefly through the nervous system. The ringing noises in the ears, restlessness, the low delirium or stupor, are the results of a profound impression upon the spine and brain. About the ninth day, in severe or fatal cases, the delirium merges into coma, or *coma vigil*. In this condition the patient lies on his back with his eyes open, but indifferent or insensible to surrounding objects. His mouth may be open, his face is expressionless, and he is incapable of being awaked from this profound comatic sleep. The feces and urine often pass off involuntarily. In fatal cases, the pulse becomes rapid and feeble, or imperceptible, and the patient gradually sinks and dies. Whenever the tongue becomes dry, brown, hard and tremulous in the early part of the attack, we may prognose an unfavorable issue.

CAUSES.—I may mention defective ventilation, destitution, and want of cleanliness as prominent causes of this form of fever. It is common in hospitals, camps, jails and other overcrowded places;

generated first *de novo*, then transmitted by exhalations from the lungs and skin of those affected with it.

TREATMENT.—It is believed by many writers that typhus fever must have its course, and cannot be cut short. However extensive this opinion, my experience amply proves to me that it can most generally be either curtailed in its duration, or the violence of its symptoms held in check, and convalescence hastened by proper means. When there is a thickly furred tongue; foul taste; thirst; pain in the head; exacerbations towards evening; the urine dark; restlessness; depression; wakefulness and frightful dreaming in the sleep, then aconite will be of great service, in doses of $\frac{1}{4}$ to $\frac{1}{2}$ gtt. every hour, or half hour, according to the intensity of the symptoms above described. As an antipyretic remedy, baptisia stands at the head of the list. It may be given in doses of 1 to 5 drops, three or four times a day to arrest the fermentation in the blood. As soon as delirium supervenes, if it is of a wild and furious character, then hyoscyamus, in doses of one or two drops, every two hours, will relieve the oppressed brain. But if there is great cerebral congestion, indicated by red, bloated face, staring of the eyes, partial paralysis of the tongue, great thirst, confusion of ideas, delirium, pricking at the bed-clothes and throbbing of the carotids, then belladonna, in doses of 2 or 3 gtt., every two or three hours, will be of material service. If there is low muttering delirium; stertorous breathing: profound stupor; hot and dry skin, or clammy skin; thick, brownish coated tongue; with great thirst; then small doses of tinct. of opium will do good service, say 1 to 5 gtt., every four hours; but it must not be given in large doses, if it is it will do great harm. If the throat becomes sore and ulcerated; loss of muscular power; extreme dryness of the tongue; quick, feeble pulse; low delirium and cold skin; then muriatic acid, in doses of 3 gtt., every three hours, will do a great good, and should be given. If there is a dark brown mucus on the tongue; thirst; bleeding of the nose; discharge of fetid urine, or involuntary, bad smelling discharges from the bowels; then rhus toxicodendron, in doses of 1 to 2 gtt., every three hours, will generally do good. If there is great prostration; sunken countenance; dry, cracked tongue; urgent thirst; and involuntary discharges from the bowels, then Fowler's solution, in doses of 2 to 5 gtt., every four hours, will be of material service. The patient's clothing and bed-clothing should be changed daily, and his skin should be washed in a solution of sulphite of sodium and occasionally, in chlorate of potassium.

Measles.—Measles is one of the infectious fevers, and is preceded by catarrhal symptoms, as sneezing, constant discharge from the nose, and not unfrequently more or less inflammation of the mucous membrane of the entire respiratory tract. This disease

was formerly mistaken frequently for scarlatina; but is quite distinct, and easily distinguished. It is not dangerous when properly treated, but by improper treatment a great many may die annually with this disease. Like other infectious fevers, it seldom attacks a person twice.

MODES OF PROPAGATION.—A susceptible person cannot stay in the same room or house with a subject of measles without a risk of contracting the disease. It is propagated in families, and is readily carried in clothes, and contaminates beds and even rooms where a patient has remained long with this disease. The contagion from measles only ceases after desquamation of the cuticle is completed, or thereabouts.

SYMPTOMS.—Measles has certain stages, such as a period of incubation, lasting from ten to fourteen days; then its precursory fever; then its eruptive stage, and finally, its decline. The first symptoms may be mistaken for an attack of the catarrh, for there is sneezing, red, swollen and watery eyes, free discharge from the nose, a hoarse, harsh cough, languor, fever, sometimes vomiting, and diarrhœa. These symptoms increase until about the fourth day, when the eruption makes its appearance, first on the face, then on the neck and breast, then gradually spreads over the entire body and limbs. The eruption is in the form of raised red spots, which soon multiply and coalesce into blotches of a more or less crescentic form, especially on the face, which is generally somewhat swollen and puffy. An abundant eruption is a favorable indication, but a scanty one is rather unfavorable. The eruption is two or three days in coming out, and then remains out about or near three days. The fever then abates and the eruption declines, becoming browner as it fades away, and the epiderm is thrown off in the form of a fine bran-like scurf. When the eruption declines, diarrhœa may occur. This unless excessive, should not be interfered with, as it is eliminative of the peculiar poison, which if it remain in the system, may produce other evil effects.

TEMPERATURE.—The average temperature is about 103° Fahr.; and if the bodily heat arises above this the case is one of great severity. If it is much below this, it may be regarded as mild. The maximum temperature is reached on the fifth day, after which it usually declines. The temperature distinguishes between the mild and more grave cases of this, as well as other eruptive fevers, and should always be noted. Sudden increase of the temperature, or the occurrence of rigors, with rust-colored sputa, indicates pneumonia or bronchitis. Pneumonia, bronchitis or diphtheritic inflammation of the larynx are the chief sources of danger in an attack of measles.

TREATMENT.—Where the fever is well marked, give aconite, in doses of gtt. $\frac{1}{2}$ to 1 every one or two hours, according to the sev-

erity of the fever. If the lungs are deeply involved, one or two drops of *veratrum viride* may be given in alternation with the *aconite*. If the eruption is slow in making its appearance, or suddenly recedes, in the case of children, there is a liability to convulsions, in which case *gelsemium* should be given, in doses of from 3 to 5 gtt., according to age, until the effects of the drug are seen upon the muscles of the eyes. I usually give it every three hours, as its effects continue about that length of time. If the throat is very sore and the eyes highly inflamed, and there is severe headache, 2 or 3 gtt. of tincture of *belladonna* should be given twice or thrice a day. If there is nausea or vomiting, administer a few drops of tincture of *ippecacuanha*. If there is a bronchial cough and pain in the chest, *bryonia*, in doses of 2 to 5 gtt. every two hours, will relieve this complication. For the cough, if excessive, I give *drosera rotundiflora* (15 to 45 of simple syrup), dose 15, every three hours. The sequelæ must be met upon the pathological indications.

TREATMENT OF SEQUELÆ.—*Diarrhœa* is apt to continue after the entire disappearance of the other symptoms of this disease. If *diarrhœa* should be very troublesome, the tincture of *pulsatilla*, in doses of 3 to 5 gtt., every two hours often will suffice for this complication. If the eyes should be much affected by measles and remain so after the main force of the disease passes off, and there should be photophobia, then gtt. 3 of *belladonna* should be given every four hours, and that alternated with the tincture of *euphrasia*, in doses of gtt. 1 to 3. If there is an harrassing cough left after the measles have passed off, then gtt. 10 to 15 of the tincture of *sticta pulmonacea* may be given, alternated with *drosera rotundiflora*. If the cough does not cease in a few days under these remedies, then from $\frac{1}{4}$ to $\frac{1}{2}$ gr. of bicromate of potassium may be given three times a day, alternated with a grain of sublimed sulphur. For œdema, which often occurs in children who have been exposed too soon after measles, the acetate of potassium is useful in doses of gr. 2 to 3, every hour or two, until the kidneys act well, and if it fails to act, then gtt. 5 or 6, of the tincture of *apocynum cannabinum* should be given every two hours.

Scarlatina.—*Scarlatina*, like the preceding diseases, is infectious and contagious. And such has been its mortality that it is much to be dreaded when in its most malignant type. It mostly affects children and young persons, and is not apt to attack them the second time. In point of mortality, *scarlatina* is second only to small-pox and typhus fever. In the year of 1863, the mortality in London, England, was 4982. In 1870, the rate of mortality in London alone was 108 per week. It is to be hoped the nature and cause of this dreaded scourge will be more thoroughly studied,

and better understood, so that this alarming fatality among our children may be much curtailed at least.

VARIETIES.—This disease may be properly divided into three varieties, or degrees of intensity, as *scarlatina simplex*, *scarlatina anginosa*, and *scarlatina maligna*. These distinct degrees in the intensity of scarlatina depend doubtless, in part, upon the constitution of the patient. Exposure to the contagion of *scarlatina simplex* may produce *scarlatina anginosa* or *maligna*. *Scarlatina simplex* is a scarlet rash with redness of the throat, but without ulceration. This form will terminate favorably if properly treated. *Scarlatina anginosa* is a more severe form of the disease, with redness and ulceration of the throat, and a tendency to abscesses in the neck. In this form the temperature is high and the circulation is very rapid. The danger arises from the complications in this form of the disease, such as ulcerations of the throat, and abscesses of the neck, &c. In *scarlatina maligna* there is an extreme depression of the vital powers, and great cerebral disturbance, added to the affection of the throat and skin; the fever soon assumes a malignant type; the tongue has a brown coating; there is often low muttering delirium; the throat presents a dark livid or sloughy appearance; the eruption comes out imperfectly or irregularly, or first appears, and then recedes; and is of a dark color instead of a bright scarlet color. This form of the disease is very fatal.

GENERAL SYMPTOMS.—Scarlatina commences with a chill, to be succeeded by a hot fever, nausea, or vomiting, very rapid pulse, thirst, frontal headache, and sore throat. In about forty-eight hours after the occurrence of these symptoms, the characteristic rash makes its appearance, first on the breast, and then gradually extends to the neck, face, trunk, and thence over the limbs. The eruption is of a bright scarlet color, and consists of numerous red points or spots. These spots diffuse themselves uniformly over the skin, or appear in large patches, more or less irregular, on different parts of the body. The color of the skin disappears on pressure, but returns again. The tongue is characteristic; it is first coated, the tip and edges are red, the papillæ are red and rather elevated, and after a time it becomes clean and rather raw looking. A diffused redness, sometimes of a dark claret color, covers the mouth, face and throat, and disappears as the fever subsides. About the fifth day, the efflorescence generally begins to decline, and disappears entirely about the eighth day, or at most, about the ninth day. In most cases, desquamation of the cuticle takes place in the form of a scurf from the face and trunk; but in large flakes from the hands and feet, occasionally coming away entire like a glove or slipper. The disease, however, does not always pursue this uniform course. It sometimes occurs without

the rash, or sore throat, and the eruption is livid and partial, and attended with such extreme prostration that the patient succumbs in a few hours under its violence.

DISTINCTIVE FEATURES.—The rash, already described.—The high temperature of the body, which is frequently 105° or 106° F.—The prominent papillæ and redness of the tongue, which is compared to the strawberry in color.—A peculiar glistening stare of the eyes, easily distinguished from the liquid eye of measles.—The sore throat, which is swollen around the soft palate and tonsils. These are the *diagnostic* peculiarities of scarlatina, but they vary in intensity in every epidemic visitation of the disease.

CAUSE AND MODES OF PROPAGATION.—The earliest source of scarlet fever is traceable to Arabia. The nature of the poison is subtle. It is doubtless transmitted by formations in the clothes, bedding, carpet, or in dry goods, and physicians often convey it from family to family. Disinfection and thorough ventilation tend to destroy this poison, and a temperature of 205° Far., will kill it. The primary fever gives rise to the infection, which continues until complete desquamation takes place.

TREATMENT.—This disease requires very early and prompt treatment, the neglect of which by the physician gives rise to the worst cases we meet with. Cases of a mild type, left to themselves, may terminate in mortification of the throat, nose, cheek, or sometimes the limbs. In *scarlatina simplex*, from 3 to 5 gtt. of belladonna should be given to adults every four hours, and 1 to 2 gtt. of tincture of aconite every one or two hours, according to the amount of fever. From children from $\frac{1}{2}$ to 1 gtt. of belladonna, and $\frac{1}{8}$ to $\frac{1}{4}$ gtt. of aconite is sufficient. If there is burning and itching of the skin it may be relieved by rubbing it well with a salty bacon skin. If there is constant and violent vomiting; severe headache; intolerance of light; vertigo; very hot red face; rapid small pulse ailanthus, in doses of 1 to 2 gtt. of the tincture every two hours, will be of material service. The above symptoms show a malignant tendency, which, if not arrested by the ailanthus, may be combated with baptisia, in doses of 1 to 5 gtt., according to the age, etc. In the anginose form, if there is rapid swelling of the throat and stinging pain, apismel, in doses of 1 to 2 gtt. every two hours should not be forgotten. If there is great restlessness and a tendency to convulsions, then gelsemium, in doses of 5 to 8 gtt. according to age, should be given three or four times a day. Where there is great prostration of strength, carb. of ammonium, in doses to suit the age of the patient, should be administered every two hours. If the throat is very sore, and the breath foetid, the patient should gargle with a solution of sulphite of sodium, and alternate with a tea-spoonful of cayenne every two hours. In the malignant form, small doses of belladonna must

not be forgotten, say $\frac{1}{4}$ to $\frac{1}{2}$ gtt. for children, and 1 to 2 gtt. adults, every four hours, to protect the brain and skin, and to aid in controlling the fever, as it exerts a controlling power over this disease. Where there is rapid prostration or emaciation, cold, clammy sweats, weak pulse, with burning heat, a few doses of Fowler's Solution should be given, to aid in eliminating the poison through the kidneys. At times, from 2 to 5 gtt. of tincture of camphor, according to age, may be used to support the patient's waning strength. If typhoid symptoms appear, then rhus tox. should be administered in small doses.

Small Pox: Varioloid.—These are highly infectious diseases, the infectious material being contained in the pustules as well as in the exhalations from the patient's body. All we know of this infectious virus is its effects upon the organism. It is readily reproduced again whilst it develops its peculiar phenomena, and thus propagated from person to person. Infection takes place by immediate contact with the patient, also by remote means. The virus is often carried in clothes or goods that have been exposed to the exhalations from the body of a small-pox patient. This infection is very persistent in its nature, and often retains its infectious power for several years, if it be excluded from the open atmosphere; and not exposed to intense heat. I knew a case in which small-pox was communicated to some persons engaged in cleaning out an old cellar, under a house where small-pox patients had been kept some two years previously.

There appears to be no great difference between the virus of small-pox and that of varioloid, except in their intensity, either may cause the one or the other form of disease. This doubtless depends very much upon the susceptibility of the subject, and the adaptation of the virus for a greater or less development of its effects under certain favorable or unfavorable circumstances. Vaccination seems to destroy, to a great extent, the predisposition to the disease; if not completely, at least partially.

COURSE AND SYMPTOMS.—After some nine days of incubation, the first stage begins with severe chill, or repeated chilly sensations, which are followed by a high fever, headache, sometimes delirium; a thickly furred tongue, generally white; a deep flush upon the face; a hard frequent pulse; a severe bruise-like pain over the body, especially in the back and loins; more or less pain and tenderness in the epigastric; these are premonitory symptoms, and are very seldom absent. And when the pain and vomiting are excessive and continuous, they indicate that there will be a severe form of the disease. On the third or fourth day, the eruption often is so minute as to escape notice, it appears in the form of red spots, or small hard pimples, which feel like shot in the skin. This eruption appears first on the face, neck and wrist, then on the body,

and finally on the lower extremities. Upon examination, the eruption may be seen upon the palate, and is sometimes found upon mucous membrane of the larynx, trachea, and bronchi, giving rise to soreness of the throat, salivation, cough, painful expectoration, and to great hoarseness of voice. These little pimples gradually increase in size until about the eighth day from the first invasion of the fever; the contents, at first watery and transparent, change to a yellowish matter as the pimples become ripened into pustules. These pustules are depressed in the centre, and are surrounded for a short distance by a rose-red areola. While the pustules are filling up, there is swelling of the eyelids and face, sometimes so much so as to deform or obliterate the features. About this time there arises from the patient a peculiar disagreeable odor, which is characteristic of this disease, so much so the disease might be known by this odor alone. There are always more papulæ comparatively on the face than on any other part of the body, and when they are so numerous as to coalesce, they coalesce in the face; rarely, if ever, on the rest of the body. *Variolæ confluentes* can only be seen on the face, whilst elsewhere the papulæ are isolated—*variolæ discrete*; or merely touch each other—*variolæ coherentes*. In from nine to ten days from the first invasion the pustules are matured. And simultaneously with this eruption on the skin, an eruption appears on the mucous membranes, and that on the conjunctiva causes a flow of tears, photophobia, and in some cases a total closure of the eyes for several days, and sometimes total blindness. When the eruption is fully developed, the pains lessen, the fever decreases and the patient is much relieved. But in cases of *variola confluens* only, the relief is not marked. When the pustules are maturing they enlarge, the surrounding skin inflames and swells, and a red areola forms around each pustule. The redness and swelling coalesce from all directions, and constitute a diffused erysipelatous appearance of the whole face, greatly disfiguring the patient. This process gradually spreads over the entire body, in the same order in which the eruption spreads. The patient complains of tension and burning of the skin, and the affections of the eyes, mouth, throat, larynx, and genitals increase in the same order. The heat of the body now rises again, and is frequently alternated with chilly sensations; it rises according to the intensity of the inflammation of skin, and does not abate until the dermatitis reaches its acme. This is the secondary or suppurative fever. It may assume a typhoid type. In other cases it may combine with a hæmorrhagic diathesis, and the pustules become bloody, and bloody extravasations take place in the skin, or hæmorrhages may take place from mucous membranes, constituting hæmorrhagic or *septic small-pox*, and finally portions of the inflamed parts may mortify, constituting gangrenous small-pox. There

may be a localising of the virus in the serous membranes, producing stitching pains in the side, cough, bloody expectoration, pneumonia, pluritis, and other effects. In extreme cases, there is pericarditis, meningitis, suppurative inflammation of the joints, periostitis, abscesses, suppuration of the lymphatic glands, suppuration of the eyes, and croupous exudations on the larynx and trachea. About the twelfth day the pustules burst and discharge their contents, which dry and form hard, brownish crusts. The fever then gradually lessens, and all the painful symptoms disappear. The crusts of the pustules gradually drop off; they usually leave dark red somewhat elevated spots, which, after some time disappear. But where there have been deep-seated ulcerations, they leave uneven scars, which, at first are red, but finally become white. In some grave cases of confluent small-pox the scars are larger and deeper, and resemble the scars of bad burns. This is the usual course of variola.

Varioloid runs a similar course, but all the symptoms are much milder; and its stages are much shorter; and its suppurative process is so mild, that it seldom leaves distinct scars. But even varioloid is milder at times than at others; like variola, it is influenced much by the diet of the patient, his peculiar condition at the time, and the temperature and other atmospherical peculiarities at the time of invasion.

TREATMENT.—At the beginning, if there is high fever, with alternate chills, dryness of the skin, rapid pulse, headache, nausea and vomiting, pain in the back, aconite, in small and repeated doses, will do great good, 20 gtt. to 4 $\bar{3}$, of water; dose, a teaspoonfull every hour through the course of the disease, when fever is prominent. If the pulse is very full and rapid, *veratrum viride* may be substituted for aconite. Digitalis, in doses of 10 to 15 gtt., and 1–10th gr., sulphate of zinc, has answered me in many cases. In all cases, where there is a severe headache, delirium, intolerance of light, I give a dose of belladonna, say 3 gtt., every three hours until these symptoms are subdued. Where there is excessive swelling of the face and eyelids, with erysipelatous redness, stinging and burning pain, apismel, in doses of 3 to 5 gtt., every one or two hours, will do good service in all cases. In those dangerous cases, where the swelling suddenly sinks in and the pustules suddenly dry up, showing a low state of the vital forces, tincture of camphor in doses of 5 gtt., every half hour or hour, will aid in sustaining the patient. Where there is great soreness of the throat, with redness and itching, hydrastis is a valuable remedy. It is said to prevent pitting to a marked degree. The fluid extract may be given in doses of 5 to 10 gtt., every hour, or $\frac{1}{4}$ to $\frac{1}{2}$ gr. of hydrastis as often. Sarracenia—the pitcher plant, is believed to shorten the course of the disease considerably. It

may be used freely in the form of infusion. Where there are glandular swellings about the neck, sore throat, and hæmorrhages, the muriate of ammonium, in small doses, will aid in controlling these complications. Where there is asthenia, with great debility, burning heat, frequent small pulse, intense thirst, restlessness, irregularly developed variola, with a typhoid tendency, or a great tendency to hæmorrhage, with a livid areola, then Fowler's solution, in doses of 2 to 4 gtt., every four hours, will aid in bringing such cases to a favorable termination; and this remedy should not be forgotten in those grave cases.

Where there are other distinct typhoid symptoms, besides those above described, such as great fetor of the body and breath, the pustules thick upon the palate, tonsils, uvula and in the nasal cavities, but very scanty upon the skin, profuse salivation great prostration and excessive pains across the loins, then baptisia will be of good service, in doses of 2 gtt., every three hours. This may be alternated with rhus tox. in doses of 2 gtt., of the tincture every three hours. Where there is great nervousness, with convulsions, or a tendency thereto, gelseminum, in doses of 8 or 10 gtt., every three hours, will be demanded. The patient's diet must be strictly guarded until well.

Vaccinia.—Vaccinia is a disease of the cow, which by inoculation, was discovered by Jenner, a century ago. It protects against small-pox generally. By vaccination the disease vaccinia is artificially introduced into the human system, for the purpose of protecting it against small-pox. According to statistics, in Sweden, forty years before Jenner discovered the prophylactic power of vaccination, about 2,050 persons died annually with small-pox; after vaccination only 158 died annually. In Berlin, before vaccination was introduced, 3,422; but since vaccination was instituted, about 176 die annually. In Paris, prior to the introduction of this prophylactic measure, about 80 out of every one hundred died of small-pox; since its introduction, about 14 to 16 die out of every hundred cases. The British army scattered all over the world, is of course, greatly exposed to this disease, but is so protected by vaccination, that but one in one thousand is attacked, and less than one in ten thousand die of the disease. (See the *London Lancet*, August 15th, 1863.) Vaccination, to be protective, must be properly performed, and good, fresh lymph from the cow or from a child, free from any constitutional taint must be used. It should be put in with a clean lancet or ivory point, which must make four or five scratches, so as to leave, at least, four good scars; this is important, as one or two scars is not a certain protection.

Intermittent Fever.—This type of fever is caused by a peculiar poison, which, under certain conditions, originated in marshy

lands, swamps, low regions near rivers, newly-settled places which are being cleared and cultivated, the vicinity of canals newly dug, and regions which seemingly lie dry, but contain a great deal of water underground; the drier the surface the greater the effluvia from underneath the porous and cracked soil. This poison is usually called *swamp-miasm* or *malaria*. Its nature is unknown, and its effects differ according to certain atmospheric conditions at the time of its production. Although swamps and damp low regions are necessary for its development, yet these seem not the only conditions that can generate this peculiar poison. Intense heat, decaying vegetable matter, and alluvium, do not explain the presence or absence of this poison, for there are sections of country where these conditions do exist where a sufficient quantity of this miasma is not produced to generate fever; on the other hand, we find certain districts in which this fever prevails frequently, where there are no swamps or alluvium. Occasionally, there are sporadic cases of fever in places where there is no apparent cause of miasma. This fact is difficult to explain. One peculiarity of this poison is its general invasion. No age or sex is exempted from its influence; the liability to repeated attacks increases with every invasion, and persons who have had frequent attacks are subject to chronic enlargement of the spleen, and malarial cachexia. In regard to the stage of incubation, it varies according to the intensity of the poison, and the stronger or weaker resistive force of the constitution of the subject. In some cases the disease is developed at once, in others it seems to linger in the system some ten or fifteen days, or longer. There is most generally a period of general *malaise*, and a disturbance of different functions, before the *apyrexia* and *paroxysm* of fever manifest themselves. This period of indisposition also differs in different individuals. This form of fever has three distinct stages, the chill, the hot stage—fever, and the sweat. The chilly stage may last but a few minutes, or it may be prolonged three or four hours, or even longer. It is a stage of great depression, in which the blood seems to leave the surface and crowd the internal organs, and in which the venous blood is stagnated in the capillaries. This causes the chill. The skin is cold, shriveled—*cutis anserina*. The internal temperature is increased one or two degrees, or even more. The patient is apt during this stage to suffer from headache, thirst, pain in the back and limbs, and oppression. The hot stage—the stage of fever, creeps on slowly, still intermingled with chilly sensations, until finally the whole surface is in a glow of heat, the temperature rising several degrees. This stage lasts from two or three, to as much as eight and even to twelve hours in some rare cases. The third stage, that of sweat, finally ends the paroxysm, greatly to the relief of the suffering patient, who now feels comparatively comfortable. But this *apy-*

rexia is seldom free from all morbid feelings and manifestations. When an intermittent fever develops its regular paroxysms in these three well marked stages, and in regular order, it is termed *intermittens completa*; when one of these is wanting, it is called *intermittens incompleta*; and if the order of its stages is reversed, that is if the paroxysm commences with the sweating stage, and ends with the chill, it is termed *intermittens inversa*. When the paroxysms come on every twenty-four hours, the attack is called a *quotidian fever*; if twice in twenty-four hours, it is called a *tertian fever*; and if three times in twenty-four hours it is called a *quartan fever*. When it occurs every seventh day, it is called *intermittens septima*. Sometimes it changes from one type to another, that is, a *quotidian* changes into a *tertian*, or a *tertian* into a *quotidian*. The disease, if neglected, may terminate in dropsy.

TREATMENT.—While the preparations of cinchona are valuable in certain stages of this disease they are not specific against it, and had better be dispensed with in many cases, rather than be indiscriminately used in all instances as they have been. There are functional and structural lesions in many cases, which demand special treatment at the outset. Each of these lesions should receive its appropriate treatment at once. For the simple element of periodicity—as an antagonist against the malarial poison, we may use the sulphate of cinchona or of cinchonidia, not in toxical doses, as has too often been done, but in moderate *medical* doses, of say gr. 5 to 8, in divided doses, of gr. 2 every hour. During the chill but little can be done, except to keep the patient as warm as possible with hot packs, &c. As soon as the hot stage sets in, the administration of the tincture of gelsemium, in doses of gtt. 10 to 15, every two hours should be commenced and continued until the fever subsides. If this does not produce a remission of the fever, after the second dose, one drop of aconite (tinct.) should be added to each dose of gelsemium. In some cases the tincture of ipecac., in doses of gtt. 1 to 2, may be given until the complication is controlled.* The above course will usually meet the indications at the outset of an attack of intermittent fever, but it often happens that the physician will have cases that have been maltreated, or neglected, and which have resulted in chronic intermittent fever, with general debility, prostration, anæmia and diarrhœa. In such cases the tincture of alstonia constricta, in doses of gtt. 5, every two hours, during the interval, is useful. In old chronic cases, where the liver and spleen have become involved as they frequently do, I find that an occasional dose of euonymin podophyllin, say gr. $\frac{1}{2}$ of the former and gr. $\frac{1}{8}$ of the latter, every six hours, until a mild aperient effect is produced, is necessary. I find that the

*See Author's New Remedies.

euonymin is not only one of the most powerful stimulants to the liver, but is also a mild anti-periodic and tonic. Where anæmia exists, I use iron and helonin, until the blood is enriched to its normal standard. In some cases of long standing, in addition to iron, I find Fowler's solution, in doses of gtt. 3 to 5 three times a day beneficial, in fact some cases are very slow to yield to any other remedy. As tonics, after the fever has been broken up, I find gtt. 20 of the tincture *ptelea* and *sabbatia stellaris*, three times a day, valuable in restoring the patient's strength. These drugs are also effective in some chronic cases, in breaking up the fever, as they are both mild anti-periodics as well as superior tonics. In some old chronic enlargements of the spleen, causing frequent relapses of this form of fever, I have given the comp. tincture of iodine, in doses of gtt. 5 to 6, three times a day, and have thus succeeded in making a final cure. Prof. Roberts Bartholow praises the anti-pyretic powers of resorcin. It is doubtless a valuable anti-fermentive, and as such, will prove valuable in this and other diseases. The dose is, in ordinary cases, gr. 5, every two hours. Benzoate of sodium is also a valuable anti-pyretic and has proved effective in this, as well as in many other diseases. Dr. Klebs, of Germany, used this article as an antiseptic in several diseases. Pilocarpine is also highly extolled as a diaphoretic, in eliminating the malaria. Apioi is also used by some writers. I have used eucalyptus in chronic malarial poisoning, with good effect, in doses of $\frac{1}{2}$ to 15, three times a day. The carbazotate or picrate of ammonium has been highly thought of as an anti-periodic* in doses of gr. $\frac{1}{8}$ four times a day, or about one grain per day. In chronic cases I have often used *ptelea trifoliata*, in doses of 15 three times a day with success, for keeping the liver and bowels regular in action.

Remittent Fever.—Remittent fever differs from intermittent fever in this, that it has no apyrexia, but in place of it there is merely a reduction of the fever, which is again succeeded by another exacerbation. In very grave cases the remission is so slight as often to be mistaken for continued fever. Remittent fever may be separated into three types, that is, the lightest form, the grave form, and the gravest form. The lightest form commences after the expiration of a stage of incubation, with a chill which is followed by a violent fever and some gastric symptoms, enlarged spleen, in some cases more or less jaundice, herpes labialis, headache, pain in the limbs, dizziness, ringing in the ears, epistaxis, great debility, and sometimes bronchial irritation. This fever may last for three weeks, or it may change, as it often does, into the intermittent type, for these are but degrees of one and the same

*See Author's New Remedies, Page 113.

disease. The graver form is characterized by the remissions gradually ceasing and the fever becoming continuous, which causes the disease to resemble typhus fever. The patient becomes delirious or lies in a profound stupor, his tongue becomes dry and his spleen is very much enlarged, and often tender upon pressure. This form lasts from ten to fifteen days. It may get better, and if so, it terminates in intermittent fever. If the disease does not get better the patient is apt to die in a comatose state, or diarrhœa or dysentery set in. The gravest form is characterized by a very high degree of adynamia. The patient rapidly sinks into a collapse. This form very soon gives rise to functional disturbances in almost all the vital organs. In some cases there is jaundice, in others, epistaxis, hæmatemesis, hæmaturia, or albuminaria, or suppression of urine; in others there are discharges from the bowels resembling cholera. The liver and spleen are much enlarged, terminating sometimes in inflammation and suppuration. The serous tissues show exudations upon them, and the skin may become gangrenous and slough off in places. There is a form of malignant remittent fever now styled *typho malarial fever*, which is the congestive fever of some of the old authors. This is however a new name for an old disease. This pernicious intermittent is characterized by greater violence of symptoms and longer duration. The stagnation of the venous circulation is greater, causing collapse, which resemble the appearance of cholera. This form prevails where there is great solar heat and an exuberant supply of marsh exhalation, out of which is elaborated this intensely poisonous effluvium, which is so depressing to the whole vital system.

TREATMENT.—The treatment must be prompt to be successful. If there is a comatose condition, one or two drops of belladonna must be given every hour until the symptom is removed. In the adynamic form arseniate of quinia should be given in doses of gr. $\frac{1}{4}$ every two hours, alternated with gtt. 5 of saturated tincture of camphor to support the vital powers. If these fail to arouse the circulation, then gtt. 30 of tincture of xanthoxylum should be given every hour alternated with gr. 5 of cinchonidia. The skin should be well rubbed with mustard-water, in which powdered cayenne is thickly sprinkled, to keep up the capillary circulation, thereby relieving the internal organs as much as possible; otherwise death may result. In the so called "*typho-malarial fever*" an antiseptic treatment should alternate with other indicated remedies. The sulphite of sodium, sulphurous acid and baptisia should be given at the outset, to counteract the septic tendency. If there is sordes on the teeth then muriatic acid, in doses of gtt. 1 to 2 every two hours, may be given in half a wine glass of water. If the fæces are slimy and very offensive, gtt. 5 of baptisia should be given every three hours, or gtt. 2 every hour until the stools cease

to be offensive. In convalescence, the patient's diet must be nourishing, but of easy digestion and unheating. In cases where the system is so profoundly affected by the poison that there is a want of reactive force, and hence the internal organs are liable to become congested, it is often necessary to apply strong washes of mustard and cayenne to the skin, to stimulate the capillary circulation. At the same time some internal stimulant may be given, such as the tincture of *xanthoxylum fraxineum* and *nux vomica*, say, gtt. 30 to 60 of the first named, and gtt. 5 of the *nux vomica* every two or three hours. In many cases that I treated in malarious regions, some years ago, I found it difficult to get a complete remission, in order safely to give the antiperiodics. In these cases I usually gave gtt. 1 of tincture of aconite and gtt. 25 to 30 of tincture of *gelseminum*, every three hours until I procured the desired remission, then I proceeded to give quinia, or one of the other preparations of the bark, in doses to suit the patient's condition. I have found *cinchonidia* much less liable to affect the hearing and sight than quinia. I have also found the sulphate of cinchonia a milder remedy than quinia, but slower to act.

Yellow Fever.—Yellow fever obtains epidemically, but only during the hot season, and rarely, if ever, in localities over six hundred feet above the level of the ocean. It generally prevails in low, level land near the sea-coast, and mostly in very hot climates. It may break out on board of ships, if they have been long at sea and are condition to favor its production, such as want of cleanliness, foul water, badly ventilated sleeping-rooms, easily decomposable freight, or excessive overcrowding with passengers. The virus producing this form of fever is altogether different from ordinary swamp miasma, as it is portable from person to person and from place to place, in ships, etc. Those most subject to this fever are the strong, young, full in habit, and such as are not acclimated. Whites are more liable than Creoles, and Creoles are more so than Negroes; Indians are the least liable of all races. The stage of incubation is generally short, sometimes lasting only a few days, and again twelve or fourteen days. The disease itself runs an acute course, lasting from three to ten days. There are three distinct stages of this fever: (1) The fever paroxysm; (2) the period of remission, with icterus and slowness of pulse; (3) the apyretic stage, with hæmorrhage, suppression of urine and collapse. The disease is generally ushered in suddenly by a chill, which is due to the depressing effects of the virus. This fever soon reaches a very high degree, to be followed by dryness of the skin or sweat. This sweat, however, does not lessen the heat, or the hardness of the pulse. Violent headache and pain in the eyes attend this stage; the eyes are red, watery, and of glassy appearance. There is also, at this time severe pain in the lumbar regions

and extremities. The patient is restless and has nausea, vomiting, and great thirst, with soreness in the epigastrium. The discharges from the bowels are retarded, and often of a light color, sometimes becoming soft, profuse and bloody; the urine also is scanty and of a dark red color. In some cases there is epistaxis. Mental dejection and physical prostration with great restlessness are also symptoms. This stage may last but one or two days, or it may continue four or five days; then follows the second stage. The patient now feels better. All the very distressing symptoms cease and the pulse falls to seventy or eighty per minute. In favorable cases this is the commencement of convalescence. In grave cases, however, the nausea and soreness in the stomach continue, and the skin and eyes begin to assume the characteristic icteroid hue. The pulse sinks below its normal standard, and the patient feels exhausted, and wears a stupid expression of countenance. These symptoms all increase in the third stage. In a day or two the soreness at the pit of the stomach turns into a severe burning sensation; the tongue becomes dry, the thirst violent, and the nausea and vomiting grow more violent. At first there may be nothing thrown up but a sour fluid, but gradually the contents of the stomach become mixed with blood, and at last the vomit consists only of pure, decomposed black blood, (the characteristic *black vomit*.) At the same time blood passes from the bowels, and, in some cases, from the nose, mouth, kidneys and capillary vessels under the skin, forming petechial spots upon the surface. The secretion of urine is now scanty, or ceases entirely. The patient is in great agony; there is either clear consciousness, or a state of delirium. This exhaustion increases very rapidly, the skin becomes darker and the temperature of the body rapidly declines, until the patient either dies suddenly in a comatose state, with delirium and convulsions, or retains his senses to the latest moment of extreme exhaustion and agony, and dies gradually. This is the ordinary course of yellow fever, but there are cases, which at first are so mild that the patient only feels unwell, and is not sick enough to take to his bed. Finally, all at once, he is seized with vomiting of blood, and rapidly sinks into a collapse.

TREATMENT.—Treatment should commence with antiseptics. Baptisia, in doses of gtt. 2 to 5 should be given every two hours, as soon as the first symptoms appear, and continued throughout the attack. To control the fever, there is nothing better than small doses of aconite, gtt. $\frac{1}{2}$ to 1, every hour. As soon as nausea and vomiting set in, Fowler's solution, in doses of gtt. 5, should be given every six hours, or gtt. 1, every hour. If there is meningeal symptoms, such as headache and pain in the back of the neck, then gtt. 3 of tincture of belladonna, should be given every three hours, until they are relieved. If there is great depression and

coldness of the surface and extremities, gtt. 2 or 3 of the saturated tinct. of camphor, should be given every hour, until its stimulating effects arouse the circulation, and thereby prevent the collapse. In some cases in Southern Georgia, pure alcohol, well diluted with water, given so as to stimulate the patient, has proved the most successful of any treatment yet tried.

CHAPTER III.

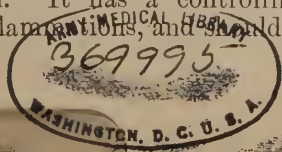
DISEASES OF THE RESPIRATORY ORGANS.

Bronchitis.—This catarrhal inflammation is characterized by a hyperæmic state of mucous tissue of the bronchial tubes, giving rise to excessive secretion, and when long continued, causing a gradual change of the texture. The mucous membrane appears ecchymosed, injected, infiltrated, opaque, swollen, and covered with abnormal secretion. The finest tubes are not unfrequently completely closed, so that the ingress of air into the air-cells is obstructed, and the blood as a natural consequence becomes poisoned with the uneliminated carbon. Especially is this the case when the disease attacks infants, or very young children who are unable to clear the obstructed air-tubes. In chronic cases, hypertrophy of the mucous membrane takes place, the muscular fibres lose their elasticity; and the bronchial tubes enlarge, sometimes evenly, or in other instances only in short sac-like tracts, which is called *Bronchiectasis*. Inflammation may attack only the larger bronchi, or only the smaller ones. If the former be the case, there will be a tickling under the sternum, and a burning or sore feeling; whilst where the smaller tubes are affected, these symptoms do not exist. This disease is attended with more or less fever, whether the larger or smaller bronchi are involved. The fever, in many cases is of a high grade. The disease is usually preceded by more or less chilliness, alternated with burning heat, without much increase in the thermometrical indications; thus it may be distinguished from inflammatory fever, which commences with an increase of thermometrical heat. This disease like catarrhal fever, often assumes a typhoid form, especially in weak children and very old persons. The patient soon becomes delirious and comatose; the tongue is dry, pulse small and frequent; and an exhausting perspiration comes on. There is a characteristic rattling in the trachea, which is caused by the inability of the muscular fibres of the bronchi. This is the so called *death-rattle*; and is a certain indication of a fatal termination. This form of bronchitis is called by old writers *pneumonia notha*. There is another form of bronchitis, which attacks children, especially those at the breast. It involves the smallest branches of the bronchial tubes, and is called capillary bronchitis. This is a dangerous form of catarrhal bronchitis, and often terminates fatally under the best devised treatment. As the smaller air-tubes are attacked, they be-

come impervious to air, and, consequently, the carbon is not expelled, and an insufficient supply of oxygen is inhaled. In these cases the respiration becomes very difficult, with hissing and rattling noises in the chest, and painful coughing spells, driving the blood to the face, and drawing up the lower ribs as in croup. When new-born infants are the subjects of this form of bronchitis, it soon develops itself into a higher stage. The child is too feeble to detach the accumulating mucous, the lungs become closed up, and the skin grows blue and gray in color; the nose becomes pointed, the eyes dull; the respiration quite superficial, and there is great danger of the disease terminating fatally.

PHYSICAL SIGNS.—Percussion reveals but little in this affection; the sound is similar to that of health. Auscultation shows a vesicular murmur, which soon becomes loud, harsh and coarse. The expiratory murmur (scarcely audible in health), now becomes louder than the inspiratory murmur. When the disease is confined to the larger bronchi, the vesicular murmur is hidden by the louder bronchial breathing. As soon as the mucous membrane becomes covered with the secretion, there is a fine bubbling, hissing and whistling sound. When the secretion is in the larynx, trachea, or the larger bronchial tubes, the rattling noise is heard all over the chest, and, consequently, we cannot well judge of the extent of the secretion by the noise in respiration. If the finer bronchi only are involved, and the respiration is feeble, the rattling noise is not heard. In vigorous respiration, if the vesicular murmur is absent, it denotes either a large quantity of mucus in the bronchi, or else the closure of the finer tubes by the swelling, which prevents the air from passing into the air-cells. Bronchitis is generally not attended with severe pain, but is accompanied by a sore, raw, and sometimes burning sensation in the chest. The sputa may be slightly streaked with blood in cases of a grave type, but is not bloody as in pneumonia. We meet with every grade of this disease, from the most severe form to the mildest. It often prevails in a mild form, and is called catarrh, influenza or *grippe*. Again it appears in a grave form, attended with high fever, and proves fatal to old people and young children. It prevails epidemically in some localities, and these visitations generally prove severe in the southern parts of the United States. It is especially rife in localities infested with malarious diseases, and in such localities is generally very severe.

TREATMENT.—In the commencement of catarrhal bronchitis, with high fever, dry skin, restlessness, headache, burning and soreness in the chest, I have found aconite in doses of gtt. $\frac{1}{2}$ to 1 every hour for adults, and gtt. $\frac{1}{8}$ to $\frac{1}{4}$ for children, according to their age, very useful. It has a controlling effect over all catarrhal fevers and inflammations, and should never be forgotten.



In children, if the disease is attended with a hot skin, a tendency to perspire, a painful cough, causing the child to cry, sleeplessness or starting in sleep, then administer a drop of belladonna once in four hours, until the child becomes quiet. In very young infants gtt. $\frac{1}{4}$ to $\frac{1}{2}$ is sufficient for the dose. If the pain in the chest is severe, the cough dry and tight, or if there be pain at the epigastrium, in the pleura, or about the chest generally, then bryonia, in doses of gtt. 1 to 2, may be used with good effect. Where there is much rattling in the chest, convulsive cough, with vomiting of phlegm, dyspnoea or nausea, with pale face, then I give gtt. 1 tincture of ipecac, to children, and gtt. 3 or 4 to adults, every half hour, until the symptoms are controlled. If there is croupous inflammation, a dry, hoarse, barking, hollow cough, then the tincture of sponge, in drop doses, every two hours, will be found effective. If there is great anguish, suffocation, palpitation of the heart, oppression of the chest, difficult breathing from tightness of the chest, and spasmodic cough with thick yellow sputa, I prescribe digitalis in doses of gtt. 1 to 2, alternated with gtt. 2 or 3 of cereus grandiflorus, every one or two hours, according to the urgency of the symptoms. Adults may take gtt. 5 to 10 of digitalis, and gtt. 10 to 15 of cereus. In capillary bronchitis with difficult respiration, rattling of mucus in the chest, short fits of coughing, and bright yellow thin stools, showing inaction of the liver, give a few drops of tincture of chelidonium every hour. If the sputa is very difficult to cough up chelidonium may be alternated with gtt. 1 to 2 of tincture of sanguinaria; gtt. 4 to 6 is the proper dose for adults, well diluted with simple syrup. I usually give the syrup of sanguinaria, made by adding 1 $\frac{1}{2}$ of tincture to 9 $\frac{1}{2}$ of simple syrup. The dose for children is from gtt. 8 to 12, and for adults gtt. 30 to 60 in water. This is one of the most certain and harmless expectorants we have, as in medical doses, it does not irritate the stomach as squills and senega are known to do, but acts as a tonic. In the advanced stage, attend with excessive accumulation of phlegm, small doses of tart. emetic are indicated, gr. $\frac{1}{8}$ to $\frac{1}{4}$. The hypophosphites are also valuable in this disease.

Whooping Cough.—This is also a specie of bronchitis, but of a purely epidemic nature, not a mere nervous affection, as has been stated by some old writers. In the incipient stage it is difficult to distinguish it from the ordinary bronchial catarrh; but later on, the paroxysms of coughing are accompanied by the characteristic *whoop*, which consists of a crowing inspiration caused by a spasmodic closure of the glottis, followed by quick, short, expirations in succession, which generally end in the ejection of masses of tough phlegm. These paroxysms come on as often as the phlegm collects in the bronchi. Respiration is so much obstructed

that cyanotic symptoms supervene, and swell the veins; in some cases, the brain is so congested, that convulsions take place. Occasionally epistaxis occurs, and the ears and mouth may also bleed more or less. Whooping cough has been divided into three stages: the catarrhal, the convulsive, and the critical. The catarrhal stage much resembles ordinary catarrh, the convulsive stage is *sui generis*, and the critical stage is similar to an attack of ordinary catarrh, and soon wears off. The disease if properly treated generally terminates in two or three weeks, but when neglected, may go on for several months and then prove fatal. Its physical signs do not materially differ from those of bronchitis. It may terminate in pneumonia or emphysema, or by its morbid effects upon the circulation, may bring about œdema of the brain and its membranes, and thus prove dangerous. This disease usually attacks children and but once; it is regarded as more or less contagious.

TREATMENT.—If the disease is attended with congestion of the brain, red face, hot head, fever, drowsiness and disturbed sleep, with starting and jerking of the muscles, then belladonna, alternated with small doses of aconite, gtt. 1 or $1\frac{1}{2}$, and gtt. $\frac{1}{8}$ to $\frac{1}{4}$ of aconite, every hour will be sufficient. If the cough becomes very frequent, and there is a sense of constriction in the chest, then gtt. 5 to 10, of *drosera rot.* may be administered every hour or two, until the symptoms are completely relieved. If there be constipation, vomiting, gagging or choking spells, with bluish face, and severe pain in the umbilical regions, small doses of *nux vomica* will be of material service, and I give gtt. $\frac{1}{2}$ to 1, once every four hours in water. If convulsions supervene, let gtt. 5 or 10 of *lobelia* be given every hour, until the convulsions cease. The diet may be moderate. Recently the fluid extract of *castanea vesca* (chestnut leaves) has been used in whooping cough, in doses of gtt. 5 to 10, every one or two hours, according to the severity of the cough. To relieve the sudden, deep spasmodic cough attending some cases of this disease, the bromide of ammonium has proven to be a prompt remedy, in doses of gr. $\frac{1}{2}$ to 1, every one or two hours through the day. Picrate of ammonium has shown itself to be very reliable in this affection. It is quite bitter, and is best given in the form of a saturated tincture, made by adding 15 to 15 of alcohol, and then gtt. 3 to 5, of that tincture may be added to 15 of simple syrup. Give from $\frac{1}{2}$ to 1 teaspoonful of this mixture, every two hours, in about an equal quantity of water. Some writers highly commend *sticta pulmonacea* in whooping-cough. *Eriodyction* is also highly extolled in whooping-cough. *Trifolium pratense* (red clover blooms) has acquired considerable reputation in whooping cough, given in the form of a saturated tincture, in doses of gtt. 5 to 10, every two hours.

Asthma.—Asthma resembles spasm of the glottis, and like it, is caused by an irritation of the vagus nerve. It may be either central, peripheral, or a mere reflex from other nerves. Asthma, when purely nervous, exhibits upon post mortem examination, no abnormal condition of the air passages. Irritation of the vagus nerve causes a spasmodic contraction of the transverse muscular fibres of the bronchi, and, hence, the great difficulty of inspiration. How this irritation upon the vagus is produced, however, we cannot tell. In some cases I have seen changes of weather produce it, in others, dust will give rise to it. In some cases indeed I have seen asthma associated with heart disease, and in others associated with emphysema, and still again connected with lesions of the liver, stomach and other organs, as the uterus, &c. Its exciting causes are various. In some persons it is produced and kept up by living in a certain locality; in some by smelling certain drugs, especially ipecacuanha; in some by sexual excesses and mental excitement, and sometimes it is difficult to trace it to any cause, save the impressionability of the patient's nervous system. It generally occurs in paroxysms every week, two weeks, or even every month.

TREATMENT.—For relief of the paroxysms, several remedies are used, such as ipecac., lobelia, gelseminum, and the inhalation of nitrite of amyl, &c. I have frequently relieved paroxysms by having the patient breathe the smoke of soft brown paper steeped in a strong solution of pure nitrite of potassium, and then dried. This paper should be burned near the patient, in order that he or she may inhale the smoke freely. The curative treatment consists in giving such remedies as counteract the spasmodic tendency of the bronchial tubes. In old people, or where asthma is connected with emphysema, or heart disease, arsenic is one of our chief remedies, and should be given in small doses, say gtt. 1 to 2 of what is called Fowler's solution, three times a day. This is a remedy also for asthma complicated with dyspepsia, as it tones up the stomach. I have used the bromide of lithium in some cases with good effect, alternated with gelseminum 2̄5; grindelia robusta 2̄5; ptelea 2̄5; eriodyction Californicum 2̄5; silphium gummiferum 2̄5; prescribed in doses of one or two tea-spoonfuls every three hours, so as to keep up the anti-spasmodic effect upon the nervous system. I use the saturated tinctures with good results.

When the paroxysms occur very frequently, and are attended with a quick, small, and weak pulse, aconite in drop doses, three or four times a day, has often aided the above remedies, in the radical cure of asthma. When connected with chronic bronchitis, the iodide of antimony, in doses of gr. 5 of the 2 dec. trituration, three times a day, has proved very successful in some cases. The

cannabis indica (India hemp) in doses of gtt. 3 to 5 of the tincture, has often given relief in extreme cases of this disease. Sumbul (musk root) in the form of a saturated tincture, in doses of gtt. 30 has proven a good remedy. Quebracho, in doses of gtt. 1 or 2 every ten or fifteen minutes, also gives prompt relief, and is worthy of a trial as a curative remedy. When connected with diseases of the heart, I find gtt. 10 to 15 of *cereus grandiflorus*, every two hours, is necessary, in alternation with other proper remedies. In some instances I have found that the tincture of digitalis, in gtt. 5 to 6 doses, is necessary, alternated with anti-spasmodic remedies. Iberis, too, has proved very successful in some cases of asthma on record. Iberis amara is the "candy tuft" of the gardens. It may be administered in the form of a saturated tincture, in doses of gtt. 4 to 5.

Pneumonia.—This complaint consists of a hyperæmia of the pulmonary capillaries, with catarrhal or serous exudation. From the different morbid products of exudation, this disease has been divided into *croupous*, *catarrhal* and *serous pneumonia*. Catarrhal pneumonia is acute bronchitis, which has been already considered, as an inflammation extending into the finest bronchial tubes, and hence, is called catarrhal capillary bronchitis. It is mostly found in children, associated with the whooping cough, influenza or croup. It is usually an extension and aggravation of these affections. *Serous pneumonia*, or acute œdema of the lungs, is characterized by a serous exudation, and is generally a secondary disease, the result of croupous pneumonia, bronchitis, tuberculosis, heart disease, measles, and typhus or scarlet fever. Croupous pneumonia is the most common form, and consists of a croupous or fibrous exudation, which is susceptible of being vitalized. It most generally attacks the inferior lobes of the lungs, especially the right one; and rarely attacks both lungs. It does not often extend over one whole lung, but is confined to certain portions, which, in some cases, are too small to be detected at first by percussion. It does not often attack the central portion of the lungs alone, but generally extends to the surface. In the aged, and generally in debilitated persons of any age, the disease attacks the posterior parts of the lungs. Pneumonia usually exhibits three stages: (1) The inflammatory stage, which is hyperæmia of the capillaries in the lung tissue with exudation of coagulable lymph; (2) hepatization, or infiltration of the lung tissue with coagulable lymph; and (3) resolution, or purulent infiltration, which is the transformation of lymph into pus. These stages are recognized by their respective symptoms. The first stage sets in gradually with a chill, which is soon followed by high fever, the pulse running up to 120° or 130°, according to the age of the patient. There is apt to be a red flush upon the cheek corresponding to the dis-

eased lung, and the lips very often become covered with fever blisters. The respiration is much interrupted, being short and labored. There is cough and rusty sputum, which soon becomes mixed with blood. If the plura be involved, there will be a sharp pain in the chest, and if there be a dull, heavy pain the bronchi are also involved. In severe cases there is delirium or stupor. The urine is scanty and highly colored, and gives a precipitate to nitrite of silver.

PHYSICAL SIGNS.—There is decreased mobility of the diseased side, and if both lobes are affected in depending portions, the patient moves only the upper part of the thorax while breathing, and the abdomen remains quiet. Palpation shows an increase in the fremitus. The impulse of the heart is very much increased, but normal in position. Percussion yields a short, tympanitic sound over the engorged parts, as long as they contain air, but this condition ceases whenever the hepatization is completed: the sound then is very dull. Auscultation reveals a fine crepitant sound, like the rattling of parchment, or the pressing of hair between the thumb and finger, or like spitting forcibly against a silk cloth. The second stage is characterized by great dyspnœa, cough, pain, brain symptoms, albuminous urine, and strong vocal fremitus. Percussion now reveals a very dull sound over the part. Auscultation gives neither the crepitant sound, nor the vesicular sound, but a bronchial breathing—bronchophony and sometimes pectoriloquy, unless the bronchi are closed up by mucus. If the bronchi be clogged with mucus, varied, rattling sounds will be heard. The third stage is characterized by a relaxation of the violent symptoms. The fever abates, the face becomes pale, the skin moist, the dyspnœa ceases, and the sputum becomes copious, frothy, lighter and more easily expectorated. The urine grows clear, copious, and again throws down a precipitate with nitrate of silver. On inspection, the thoracic walls will be seen to have regained their mobility. The percussion sound again becomes tympanitic, and upon auscultation the bronchial sound, the bronchophony, has become weaker; the crepitation sound then reappears, and finally yields to the natural vesicular respiratory sound. These stages, in the usual course of the disease, occupy about fourteen days. But, in some cases, we observe a new invasion of the disease following the first attack, and a portion of healthy lung becomes œdematous; that is, it becomes infiltrated by a serous exudation, in which the dyspnœa increases eventually to suffocation. This fatal result is brought about by an increased quantity of carbon in the blood. In some instances, the disturbed circulation of the lungs causes a hyperæmic condition of the brain, and the blood not being sufficiently oxygenized, or being retarded in its return from the brain, causes stagnation and death, a form of

apoplexy. Abscesses may form in the third stage, which, if small may heal. But when the abscesses are large, and form large cavities, there will be pectoriloquy, or a metallic tinkling. In some cases, where the upper portion of the lungs are attacked, the hepatization may be transformed into tubercular infiltration. If this be the case, the fever does not leave altogether, but shows some increase at night. The dyspnœa, cough and dull sound of hepatization continue, and auscultation reveals bronchophony. In some rare instances, the hepatized lung becomes indurated, or cirrhotic, the interstitial tissue becoming tense, and rendering the air-cells impervious. In such cases convalescence is tedious, and for some time, upon percussion, we discover a very dull sound with bronchial breathing, and there is more or less depression in the thorax. It occasionally happens that gangrene takes place; which will show itself by sudden collapse, cadaverous odor of the breath, and by the expectoration growing very dark, and copious in quantity. Pneumonia, without treatment, or with poor treatment, may continue from twenty to thirty days, but with good care, it is possible to arrest it in either of the three stages. It may with proper treatment be brought to a favorable termination in from 9 to 14 days in most cases, where there is no complication.

TREATMENT.—Where the febrile symptoms are well marked, and the secreting functions are suspended or imperfectly performed aconite is a most valuable remedy, in doses of gtt. $\frac{1}{4}$ to $\frac{1}{2}$, every fifteen minutes, or gtt. 1, every hour, when the inflammation does not run so high. If the respiration is short, labored, rapid, and attended with a sharp pain in the side, with a very painful dry cough, give bryonia, in doses of gtt. 1 to 2, every three hours, or in very urgent cases, every hour or two. If the chest is oppressed with excess of sputum, and there is great rattling of mucus, nausea, profuse expectoration, violent throbbing of the heart, and a sense of suffocation, gtt. 1 to 2, of the tincture of ipecac. and gtt. 1 to 2, of tincture of sanguinaria, may be given hourly. If cerebral complications arise, as indicated by nervousness, delirium, sleeplessness, picking at the bed clothes, flushed face, and congested eyes, then tinct. of belladonna, in gtt. 3 to 5 doses, every three hours, until the mind is entirely relieved, will be found invaluable. If the liver is involved, as indicated by pain under the scapula, then chelidonium, in doses of gtt. 10 to 15, four times a day should be prescribed, until this complication is relieved. After hepatization takes place, the iodide of potassium may be alternated with the bromide of sodium, or with syrup of sanguinaria. If typhoid symptoms supervene, phosphorus, in the form of saturated tincture, in doses of gtt. $\frac{1}{4}$ to $\frac{1}{2}$, every three hours will act well in sustaining the nervous system. If there is pleuro-pneumonia, the tincture of *asclepias syriaca*, in doses of gtt. 20 to 30, may be alternated with

aconite, every hour or two, according to the urgency of the symptoms. In pneumonia I have found hot compresses of much benefit, as well as of much comfort to the patient. They relax the skin, and distend the capillary vessels, thereby inviting a larger quantity of blood to the surface, and of course withdrawing that much from the engorged lungs. Compresses are much better than blisters. In the second and third stage; if attended by extreme dyspnoea, tough sputum, stitching pain in the chest, and quick, small pulse, the tincture of sanguinaria, in doses of gtt. 4 to 6, every hour will aid the other remedies in bringing about a favorable termination of the disease. It may be used where the pulse is very quick, full, hard and strong, but not otherwise; when needed I would use it in small doses, say gtt. $\frac{1}{2}$ to 1, every two hours.

Phthisis.—Phthisis, or consumption, is a condition having its remote origin in a peculiar scrofulous diathesis. In this deadly disease certain morbid bodies, called tubercles, are deposited in the lungs, and in these bodies there is soon set up a process of suppuration and ulceration looking to their discharge. The disease is not confined to age or sex, but is most frequently developed in early life, say, from 18 to 30 years of age. When fully developed it is generally supposed to be incurable, but, in its early stages, remedial and hygienic measures may be brought to bear upon it with much hope of success. An hereditary tendency or predisposition to this disease exists in many constitutions, but it is possible that an acquired debility of the system (which may be developed by various causes) may at times, give rise to it. Indigestion, masturbation, chlorosis in females, acute eruptive fevers, typhus fever, whooping cough, pleuritis, pneumonia, and a humid atmosphere may all aid in developing this disease.

TUBERCLES.—These morbid products are of various sizes, and consist of a yellowish, cheesy substance, which gradually degenerates into pus or an ichorous material destroying more or less of the lung tissue. In this way are formed abscesses, which, when emptied, form cavities of vomicæ. In new-born infants and young children, tubercles may form in the mesenteric glands and at the base of the brain, causing, in the first case, intestinal tuberculosis, and in the latter, tubercular meningitis, both of which are as fatal, generally, as phthisis.

SYMPTOMS.—The early symptoms are often obscure and consist of cough, dyspnoea, irregular wandering pains about the chest, excessive susceptibility to cold, impaired digestion, loss of flesh, debility without any visible cause, hæmoptysis, flushing of the cheeks, and acceleration of the pulse in the evening, followed by disturbed sleep, and morning sweats. It is not uncommon for the first noticed symptoms to be spitting or coughing up blood. As the disease advances, respiration becomes rather distressing, the

sputa become more purulent, and emaciation and exhaustion take place from imperfect digestion. The intestines may be implicated in the tuberculous deposit, and then there may be diarrhœa. The mucous membrane of the respiratory organs becomes ulcerated or thickened, the voice grows husky or imperfect, and aphony results from ulceration. Aphthæ of the mouth, pharynx and larynx often form, and the feet and ankles occasionally become œdematous. The sub-clavicular region sinks in, and the clavicles become prominent, and the thorax flattened and elongated. The respiratory motion decreases or ceases in these places, and in advanced cases, the respiratory motion is only seen in the lower portion of the thorax. Emaciation is rapid, the skin is loose, thin and pale, and the finger and toe nails become rounded, from deficiency of the hypophosphites in their composition. Palpitation of the sub-clavicular region reveals stronger fremitus. There is impulse in the heart's action. Percussion at the outset of the disease affords no results, as the tubercles, while small, do not effect the sound; but when they become large, and in masses so as to lessen the amount of air in the lungs, the sound becomes very dull, especially in the infra-clavicular, acromial and supra-scapular regions. In the advanced stage, after the cavities have formed near enough to the thoracic walls to reflect sound, percussion over that part yields a metallic or tympanitic sound. Auscultation in the beginning of the disease gives an increased and rather prolonged expiratory murmur, and sometimes fine rattling noises. After the tubercles dissolve, a clicking sound is heard, and after the lung tissue has become infiltrated with tubercular masses, we hear bronchial breathing and broncophony, with various rattling sounds.

TREATMENT.—In the incipency of tuberculosis, use iodine in the form of Lugol's solution, gtt. 3 to 5, three times a day, alternated with pure creosote, say gtt. 25 to water 4 $\bar{5}$ —dose a teaspoonful three times a day. This aids in preventing indigestion and diarrhœa, and at the same time acts as an antiseptic, preventing decomposition. In some cases I have succeeded with the phosphates, alternated with the tinctures of ptelia and euonymus atropurpureus, in moderate doses, twice daily. I use the compound syrup of the phosphates, as given by Churchill. After diarrhœa sets in, Fowler's solution, in gtt. 1 to 2 doses, three times a day, is of great utility; often arresting the diarrhœa, and improving the digestion. Where the cough is very excessive, and attended with a purulent expectoration and hectic fever, I have found Peruvian balsam, in small doses, to reduce it very much. In cases where there is a very great tendency to decomposition, great dyspnoea, diarrhœa, utter prostration, and aphthæ about the mouth or throat, I give iodide of arsenic, in small doses of 1 gr. of the 3 dec. trituration, three times a day. Cod-liver oil, salicin, quinia, or-

ganic salicylic acid, iodide of iron, iodide of manganese, carbolic acid, phosphoric acid, hypophosphorus acid, maltine, petroleum and crude mecca oil, have all been highly praised as anti-phthysical remedies. Cod-liver oil has long been used, rather routinely, as a kind of *specific*, but has often failed, as other remedies have done, and always will do, until given in accordance with the *pathological indications for the remedy*. Given where the digestive system is feeble, it does great harm, as it increases the indigestion. This fact accounts for the great diversity of opinion in regard to the utility of this remedy. It will not do either, where there is inflammatory condition of the system existing, with tuberculosis, as it aggravates this condition, and so hastens the anatomical lesions. In such a condition, instead of the cod-liver oil, I give gtt. 1 to 2 of aconite, three or four times a day, until the inflammatory symptoms cease. But where there are no actual inflammatory manifestations, I would advise 1 $\bar{3}$ of the cod-liver oil, with 2 $\bar{3}$ of pure maltine, three times a day. In most cases that I have treated, there has been more or less inaction of the liver, causing secondary indigestion. Where such is the case, I have found euonymus atropurpureus in doses of gtt. 20 or 30 of a saturated tincture, or gtt. 15 or 20 of the fluid extract, one of our most trustworthy remedies. Petroleum possesses marked antiseptic properties, with which it arrests the *blood poison*, thereby lessening the tendency to disorganization of tissue. I have frequently combined ptelia trifoliata and euonymus atropurpureus with the hypophosphites, in the form of a syrup, by adding 4 $\bar{3}$ of each of the above remedies (in the form of fluid extracts or saturated tinctures) to 8 $\bar{3}$ of the hypophosphites as given by Prof. Churchill, of England. I have given a tablespoonful of this mixture, three or four times a day. It has a better effect (in the non-inflammatory form) than anything I have lately tried. I have a patient now under my treatment, who came from Franklin, Pa., in an advanced stage of *phthisis*, who is now able to be up all the time, and is gaining strength and flesh under the above regimen. Some years ago, perhaps about 1862, I was called to a patient in Buford, Ga., whom I found in the advanced stage of *phthisis pulmonalis*, much emaciated, bed-ridden, in child-bed, with hectic fever, night-sweats, and a large vomica in the left lung. The larger portion of both lungs was filled with tubercles. This case presented all the symptoms of hastening dissolution, but I put her upon the hypophosphites, ptelia, and euonymus, and she mended from the first week or two. She finally recovered, and is now a *living monument* of the efficacy of the above remedies. These remedies possess the power of assisting the digestive apparatus, and also of the assimilating functions, thereby elaborating a protoplasm, out of which a much healthier cell-nucleus is formed.

At the same time, doubtless, they stimulate the excretory organs to eliminate the aplastic or worn-out elements from the entire body. It must not be expected that these, or any other remedies, can control all cases, especially those in which the destructive metamorphosis has advanced too far to be arrested, for there is a point in this disease, as well as in many others, where a cure is impossible. Where there is a high degree of inflammatory excitement, the hypophosphites are contra-indicated. In this condition aconite should be given, in doses of gtt. 1 to 2, three or four times a day, alternated with mecca oil, or crude petroleum, in moderate doses, of from $\frac{1}{2}$ to 15. Petroleum is of much value in all cases of catarrhal complications in phthisis, soothing the harrassing cough, and lessening the excessive expectoration that often attends this disease. It exerts no control, however, over the tubercular cachexia, and hence we must look to other remedies to prevent and control the *primordial lesions* of this disease. The phosphates or phosphorus, in the form of oils of the metalloid, alcoholic tinctures, or etherial tinctures cannot possess nutrient properties until they are vitalized so as to assume an organismal power, hence these forms of phosphorus are not assimilated until they are vitalized. There exists in the capillaries, a tri-basic phosphate of lime, magnesium, sodium, potassium, and iron, which is very similar to that found in the cereals. It is further noted, that those organic phosphates which are elaborated in vegetables are very active aliments, and readily assimilated.

HYGIENIC TREATMENT.—The patient's diet should be highly nutritious, but such as is easily digested. The tender parts of beef mutton, game and fish, with stale bread, should constitute one or two meals a day; milk, eggs, butter and oysters, may also be used if the stomach will digest them easily. Cod-liver oil, in small quantities, emulsified with maltine, should be taken after each meal. From one to two teaspoonfuls may be taken at each dose provided it does not oppress the stomach. If digestion is feeble, lactopepsin, in doses of gr. 40 to 60, may be taken in water just after each dose. Daily exercise in the open air, should be insisted upon when the weather is favorable. The skin should be bathed daily, and followed by a friction with a crash towel. If the weather is cool, the water may be tepid at first and gradually reduced in temperature until it is cold. In the commencement of the disease (*not after the system is too far debilitated to be benefited*) the patient should seek a high, dry, and moderately warm climate, *not a hot, humid atmosphere, filled with miasma*, but one filled with ozone, which prevails in altitudes from eight hundred to one thousand feet above the level of the ocean. Many consumptives have improved rapidly by visiting Marietta, Ga., and similar places.

Emphysema.—This disease consists of an enlargement of the

air-cells, either from a coalition of several of them into one, or from mere distension of the cells. It may also be a transmission of air into the sub-pleural cellular tissue. In emphysema, post-mortem examination shows the lungs swelled out, and a want of that peculiar crepitation of the healthy lung when pressed between the fingers. The air-cells are widened, sometimes to the size of a partridge-egg, or even larger. I saw a very extreme case in the hospital at Philadelphia, Pa., in the year 1867, exhibited by Dr. Da Costa, which showed the air-cells as large as a walnut at the apex of each tube of the lungs. This disease may be produced by violent inspiratory effort, as in asthma; or it may originate in phthisis, pneumonia, or bronchitis, (from the tubes being blocked up with tough phlegm). Whooping cough, playing upon wind-instruments, and severe straining may also cause emphysema. It prevents the oxygenation of the blood, surcharges it with carbon, and lessens its percentage of oxygen. This deficiency of oxygen and excess of carbon gradually grows greater, until extreme dyspnœa takes place, causing the patient to strain the respiratory muscles so much that the thorax becomes arched and very much dilated. As the air-cells become obliterated, so do the capillaries of the lungs. Consequently, the blood from the right ventricle cannot find space within the lungs, and stagnation of the blood follows, causing hypertrophy of the right ventricle. This is followed by the usual consequences, which are undulations of the right jugular vein, cyanosis of the face, varicosis of the vessels of the *alæ nasi* and cheeks, swelling of the liver, scanty urine and hæmorrhoids.

DIAGNOSIS.—On inspection, the chest is found arched, barrel shaped and dilated to the sixth rib. This condition, however, is not universal, for emphysema may exist without such marked alteration. Palpation generally reveals the fact that the heart has been forced lower down towards the pit of the stomach. Percussion gives the dull sound over the heart and liver covered with the distended lung, hence we have the lung sound over the heart and liver. Auscultation affords but little information. If there is catarrh associated with emphysema, we should hear rattling and bubbling noises. The progress of the disease is slow, and its acute attacks are provoked by bronchial catarrhs. It may end in general dropsy and death, or it may last for years.

TREATMENT.—Like phthisis pulmonalis, emphysema is very difficult to cure. When the dyspnœa is very great, and the face cyanotic, tinct. of arsenic in doses of gtt. 2 or 3, three times a day, generally affords signal relief. If the circulation is much disturbed, and there is headache, dizziness, palpitation of the heart, and fulness of the abdomen, gtt. 3 or 5, of tinct. of belladonna, three times a day, will give relief to these symptoms. If there are attacks of suffocating dyspnœa, attended with cold sweats over the

body, coming on regularly every morning, I then prescribe small doses of arseniate of quinia. The 1st centesimal trituration is as strong as it can be used, as it is highly toxic. The dose of that trituration is gr. $\frac{1}{2}$ to 1, three times a day. In old cases, where there is hypertrophy of the heart, digitalis, in small doses, say gtt. 5 to 10, every four hours, often brings relief. This may be alternated with cactus, gtt. 10 to 15. If there is a dry, spasmodic cough, and the sputum is tough and difficult to raise, small doses of the tincture of ipecachuanha and sanguinaria, will produce easy expectoration; gtt. 1 to 2 of ipecac., and gtt. 5 to 6, of sanguinaria, is sufficient. If that fails, the tinct. of lobelia and syrup of senega, may be used.

Pleurisy.—In pleurisy, post mortem examination reveals the fact that the inflammation results in an injection of the pleura, with pinkish stripes and spots here and there. These consist in enlargement of the capillary vessels; and in some cases there are irregular, ecchymosed patches of dark red extravasation in the pleura. The surface of this membrane appears dull and swollen, and sometimes rough, *villous*, and granulated. This is so in many instances, but in some cases, in addition to the above pathological conditions, there is a scanty fibrinous exudation, like a soft, croupous membrane, covering the pleura. Where there is recovery, this exudation may be dissolved by fatty metamorphosis, and thus be absorbed; but the fine granulations, and new cells which lie underneath, frequently give rise to adhesions of the pleural surfaces. This fibrinous exudative pleurisy also accompanies most cases of croupous pneumonia. In some cases a large quantity of a greenish yellow serum, and coagulated fibrinous masses, may collect, float in the serum, and finally adhere to the pleura like croupous membranes. There are always more or less pus globules contained in this secretion, and so there may be bloody exudation. In cases that recover, this secretion may be gradually absorbed, and between the adhesions, there may be left a yellow cheesy material, the residue of unabsorbed pus-globules and fibrinous substances. As absorption advances, the lungs regain their normal volume, provided the air-cells be not closed by fibrinous deposits. In some cases where the exudation is purulent; (that is, so full of pus-globules that it forms an opaque, yellow, thick fluid, called empyema,) it constitutes *pyo-thorax*. But even in these cases, absorption may take place in time, and a cure be the result. If the pleura itself becomes involved in the suppurative process, it causes softening and finally perforation of its tissues, and the pus escapes outside, either through the thoracic wall, or through the bronchial tubes, is thereby coughed up, and the patient recovers.

SYMPTOMS.—In the first form of pleuritis, where there is no exudation, there are no well marked symptoms. But in the second

form, where there is fibrinous exudation, when it is attended by pneumonia or tuberculosis, there is sharp pain, which prevents deep inspiration; and sneezing and coughing give rise to increase of the pain. If not complicated with either of the above diseases, there is but slight cough attending it. The third form, with abundant sero-fibrinous exudation, usually commences with a chill, followed by high fever. The chill may be repeated, giving rise to the suspicion that there is a complication of intermittent fever. This, like the second form, is accompanied by a violent pain in the side and chest. This pain is usually attended with dyspnoea as long as the fever lasts, and when there is extensive exudation compressing the lung, there may be a cough. Pleurisy reaches its climax in six or eight days, and may then begin to decline. The fever, pain, and cough cease, and absorption of the exudation commences, progresses slowly, and finally, in a few weeks the fluid is removed.

PHYSICAL SIGNS.—Upon inspection the thorax is discovered to be enlarged, from the exudation. The intercostal spaces appear level with the ribs, or may in some cases bulge out between them. The respiratory motion is much lessened.

PALPATION.—This reveals the absence of the vocal fremitus, which is the result of the fluid between the thoracic walls and the lung. The heart and liver are also found to be moved out of their normal place.

PURCUSSION.—This yields a duller sound, but if the exudation be moderate, so as not to compress the lung and drive all the air out of it, there will be a tympanitic sound.

AUSCULTATION.—This reveals an absence of the natural respiratory murmur over the part covered with the exudation.

In the fourth form, which goes by the name of *empyema* or *pyothorax* there are similar physical signs, as above stated. When pus is about to make its way through the thoracic walls there will appear an œdematous swelling, between the fourth and fifth ribs, which soon grows hard and tense, and protrudes between the ribs. Finally this tumor becomes soft, and if not opened, will burst and discharge the pus. When it breaks through the bronchial tubes, it may do so suddenly, causing violent paroxysms of coughing, the patient throwing up large quantities of seropus or pus. The patient may suffocate or sink under the pyemic poisoning of the blood, or the pus may make its way down through the diaphragm into the abdominal cavity, causing peritonitis, and death thereby.

Pleurisy is distinguished from pneumonia by the repeated chills at its outset; catarrhal sputa; pain; enlargement of the thorax; dislocation of the heart and liver, and the friction sound. In pneumonia, there are rust-colored sputa, but dull, or no great

pain unless the bronchial tubes are involved. There is increased vocal fremitus also, and a crepitant sound, but no dislocation of the heart and liver.

TREATMENT.—Where there is great thirst, high fever, quick pulse, dry skin, pain in the side and chest, inability to lie on the right side, and dry hacking cough, aconite, in doses of gtt. 1 to 2 should commence the treatment. The dose need not be repeated oftener than every hour. Perhaps a better plan would be to give gtt. $\frac{1}{2}$ or $\frac{1}{4}$ every fifteen minutes until the pulse and fever are both reduced, and then at longer intervals. If the tongue is coated with a white fur, the pain in the chest is severe, and there is great thirst, bryonia should be alternated with the aconite, in doses of gtt. 2 to 3. There is pleura-pneumonia in some cases, where we have bloody or rusty sputa and severe cough, which may be treated with tincture of sanguinaria gtt. 3, or gtt. 20 or 30 of the syrup of sanguinaria with the same quantity of wine of antimony given every two hours at the outset, and alternated with tinc. of aconite. Where the skin is dry and harsh, I find the tincture of asclepias, in doses of gtt. 20 or 30 every hour, or in severe cases, frequently repeated, to be one of our safest and most prompt diaphoretics. Warm compresses (made by soaking flannel cloths in hot water, and wringing them sufficiently), applied to the chest, will aid in the relief of the pain, and the internal congestion, by driving the blood to the surface.

Hæmoptysis.—When the capillary vessels of the bronchial tubes become ruptured, and the blood, either thin or coagulated, is coughed up in large or small quantities of a bright dark color, it is called hæmoptysis, or blood-spitting. When abscesses, tubercular cavities, etc., cause the rupture of larger vessels, and a profuse flow of blood from the lungs, it is called hæmorrhage of the lungs or pneumorrhagia. Sometimes the blood is not brought up; in that case, it collects in the parenchyma of the lungs, and forms the so called *hæmoptoic infarctions*, which appear black and shining, have an uneven granulated appearance, and are of various sizes, from that of a pea to that of a walnut; they contain no air, and sink in water. When infiltration takes place, and the parenchyma of the lung gets torn, the blood fills the opening, and in this way produce pulmonary apoplexy. This pulmonary apoplexy gives a very dull sound upon percussion. When hæmorrhage of the lungs results from tuberculosis and disorganization, it is an alarming disease, as it is apt to recur again and again, greatly to the distress of the patient. It often proves fatal, unless arrested. The disease may arise from disease of the heart, caused by obstruction in the *ostium venosum*, and insufficiency of the mitral valve.

TREATMENT.—There is quite a number of remedies recommended

for this hæmorrhage, but I have found only a few that are reliable in urgent cases. Among them is the tincture, or infusion of *lycopus virg.* or *bugle weed*. This plant not only possesses sedative powers, by which it controls the capillary circulation, but is also astringent, and so lessens the caliber of these minute vessels, and consequently, reduces the flow of blood in proportion. It is much safer than *digitalis*, as it is not like it, accumulative in its action. So positive is its action in hæmoptysis, that I have seldom had to use any other remedy to check ordinary cases of of this affection. In the absence of the *lycopus*, *aconite* in small repeated doses, alternated with the fluid extract of *ergot*, in doses of gtt. 15 to 20, every one or two hours, according to the urgency of the case, acts admirably. Vegetable charcoal, properly prepared, in small doses, is of utility in cases of slow pulse and cold skin attended with proxysms of cough and hoarseness. If the hæmorrhage is associated with piles, *collinsonia*, in doses of gtt. 20, three times a day, will be found useful. Where there is anæmia, iron should be in connection with other remedies. If the hæmorrhage is from the venous capillaries, *hamamelis*, in gtt. doses, every half hour, is very positive in action.

Pneumothorax.—Pneumothorax consists of a collection of air or gas within the pleural sac. Air alone does not constitute the disease, but pus, blood or serum are usually found with it, hence, it is called either pyo, hæmato, or hydro-pneumothorax. Pneumothorax is known by the enormous extension of the thoracic wall of the affected side and by the bulging out of the intercostal spaces. When it affects the left side it pushes the heart to the right side, it presses the liver down into the abdominal cavity. The gas consists mostly of carbonic acid and nitrogen, with a small percentage of oxygen. If, however, decomposition has taken place there is sulphuretted hydrogen gas. These substances may be limited to a small space or they may fill the pleural cavity. The entrance of air into this cavity is occasioned by a perforation of the pleura pulmonum, allowing the air to enter from the air-cells of the lungs; or it may originate from a perforation of the thoracic wall, permitting the air to enter from without. Gaseous substances may, too, result from decomposition in pyrothorax. The disease makes itself known by dyspnœa and by the patient being compelled to sit up and keep the sound lung free from pressure. The worst cases occur in connection with tuberculosis, gangrene or cancer.

PHYSICAL SIGNS.—Upon inspection enormous enlargement of the diseased side of the thorax will appear, and there will be a bulging of the intercostal spaces and a want of respiratory movement. The breathing is suspiratory. Palpation reveals an absence of vocal fremitus. the liver and spleen are displaced down-

wards, and the heart is found much out of place, towards the middle or right side of the thorax. Percussion reveals a tympanitic sound, unless the thorax be greatly distended, when it becomes non-tympanitic. Very often the upper part of the lung is so compressed that there is a dull sound. If there be effusion the sound of the lower portion of the thorax is dull when the patient is erect, and changes when he shifts his position. Auscultation reveals a full resonant percussion sound, with a metallic, tinkling sound when the patient coughs, talks, or inhales deeply. Over the compressed lung there will be broncophony and bronchial breathing.

DIFFERENTIAL DIAGNOSIS.—This disease differs from emphysema by its dyspnoea coming on suddenly and growing worse regularly and steadily. The one-sided distention of the thorax, the great bulging of the intercostal spaces, the absence of fremitus, the absence of vesicular murmur, and the presence of a tinkling sound, also serve to distinguish between the two diseases.

TREATMENT.—Where the dyspnoea is sudden and very distressing, I use small doses of tincture of arsenic, gtt. 2 or 3, every three hours. If the disease be the result of external wounds or injuries of the chest, aconite in doses of gtt. $\frac{1}{2}$ to 1, in alternation with gtt. 1 of arnica mon., every two or three hours, will give relief. After the inflammatory symptoms are under control by the aconite, give delphinium staphisagria, in doses of gtt. 2, every two hours. If these remedies fail to arrest the morbid process, then resort must be had to the aspirator. As a general rule the aspirator should be made to enter just above the sixth rib, unless the pus be thick, when it may be better to let it out at the anterior portion of the chest. It may be necessary also to puncture this part, and keep the wound open for some time, as the discharge will be kept up probably for nine months. In the anterior portion of the chest, there is less danger of the aperture closing. This is the case too when the opening is made in the side.

Hydrothorax.—Hydrothorax consists of a collection of serum in the chest—within the pleural sac—without marked inflammatory symptoms in that locality. It is generally on both sides of the chest at the same time, although one side sometimes contains more fluid than the other. The color of the serum differs in different cases; sometimes being clear, as others, yellowish, reddish, or greenish. It never contains fibrinous substances, as is always the case in a pleuritic exudation. There is often, however, albumen present. The pleura exhibits no signs of inflammation, but are of a pale and dull color. This disease often follows organic disease of the lungs and heart, which cause obstruction of the venous circulation within the lungs; or it may be the result of some morbid condition of the venous or arterial system, causing

the blood to become thin and watery, as is the case in Bright's disease. It may also follow disease of the liver and spleen, and as a result of anæmia and cachexia. It is most frequently, therefore, attended by general dropsy. Its symptoms are various, according to the complications attending it.

SYMPTOMS.—Dyspnœa, which is always worse when lying down, is one of the most prominent symptoms. When the patient is sitting up the fluid gravitates to the lower part of the thoracic cavity, and thus allows space in the upper part of the thorax for a partial expansion of the lungs, while in the reclining position the lung is compressed by the fluid. Where there is a large collection of serum, the patient is compelled to sit up all the time, or he suffocates. On inspection the chest presents an enlargement visible to the eye. Palpation shows absence of vocal fremitus, and displacement of the heart, liver and spleen. Percussion gives a dull sound as far as the fluid reaches. Auscultation shows absence of the vesicular breathing over the space occupied by the fluid, but there may be bronchial breathing about the spine, where the lungs are compressed.

TREATMENT.—The treatment must be in accordance with the existing complications. If there is irritability of the stomach, suppression of the urine, and very short breathing, I usually commence the treatment by giving gtt. 10 to 30 of apocynum cannabinum every three hours, and alternate that with gr. 10 to 15 of nitrite of potassium in half a glass of water. If these fail, I then give digitalis, gtt. 20, thrice daily. The kidneys are frequently hard to manage, and it requires very active diuretics to produce the desired effect. Where the hydrothorax accompanies heart disease, asparagus, in the form of a strong infusion, often acts admirably. I have found the polytrichum juniperum (*haircap moss*) to be one of our best diuretics. It may be given freely in the form of infusion. I use pipsissewa, in connection with the above, with good effect. If the stomach and bowels are affected, and there is great dyspnœa, thirst and palpitation of the heart, tinct. of arsenic is a valuable remedy; it should be given in drop doses, every meal. If there is heart disease, that should also be treated, or a cure cannot be effected. If the liver and spleen are diseased, they should receive due attention. After the fluid is removed it requires the best of treatment to prevent its reaccumulation. I usually put my patients upon iron, alternated with helonias dioica to enrich the blood, and restore the lost balance between secretion and excretion. If the stomach and liver are at fault, bryonia, in doses of gtt. 2 to 5 three times a day, will aid digestion, and regulate the bowels. Aselepias syriaca is also a valuable remedy in all forms of dropsy.

CHAPTER IV.

DISEASES OF THE HEART.

THE HEART.—ITS EXAMINATION BY AUSCULTATION.—In order to understand the disease of the heart, it is necessary to become acquainted with the healthy or normal, and the unhealthy, or abnormal sounds of this organ. There are four divisions of the heart, to wit: two auricles and two ventricles—which, from their respective positions, are called right and left auricles, and right and left ventricles. Into the right auricle the *venæ cavæ* empty the blood which has been used by the body for its sustenance. From the right auricle, there is an aperture leading into the right ventricle, called the *auriculo-ventricular opening*. This opening has three triangular folds, opening inward, which are called the *tricuspid valves*. The right ventricle has an opening leading into the pulmonary artery, which carries the deoxygenized blood into the lungs. This opening is guarded by a set of valves called *semi-lunar valves*, which open outwards. This arrangement is also repeated in the left auricle and ventricle. The left auricle receives the oxygenated blood from the lungs through the pulmonary veins. From the left auricle, there is a like opening leading into the left ventricle, which is also guarded by valves, consisting of two segments. These are called *bicuspid* or *mitral valves*, and open inward. The left ventricle has also an opening, which leads into the *aorta*, through which the heart pumps the blood to every part of the body. There are, likewise, in this opening, a set of valves, of the semi-lunar variety, which open outward. The following is the *modus operandi* of the heart as soon as the ventricles become fully distended, they simultaneously begin to contract, and, on account of the direct relation of the several valves to those two cavities of the heart, the blood, under great pressure from the contraction of the ventricles, forcibly shuts the tricuspid and mitral valves, thus closing the auriculo-ventricular openings, and the same action opens both sets of semi-lunar valves for the escape of the blood. As before stated, the pulmonary artery carries the dark blood to the lungs, from which the pulmonary veins return the blood (*oxygenated*) to the left auricle, thus forming the *pulmonary circulation*. Then through the aortic valves and artery, the red blood is propelled through the entire body, from whence it is returned through the *venæ cavæ* to the right auricle; forming the *systemic circulation*. As the two ventricles contract, the two auricles dilate, and *vice versa*. This contraction of the ventricles and simultaneous dilatation of the auricles, constitute the

heart's *systole*, and the forcible closure of the auriculo-ventricular valves, produces the *first sound* of the heart. The dilatation of the ventricles and simultaneous contraction of the auricles, is known as the heart's *diastole*, which, by forcibly closing the two sets of valves (*semi-lunar*) produces the *second sound* of the heart. The first sound then, is caused by the shutting of the *tricuspid* and *mitral valves*. The second sound, by shutting of the *semi lunar valves*. Being acquainted with the position and character of the normal sounds of the heart, the physician is prepared to study the abnormal sounds of the organ in disease. For instance, the normal first sound, heard most clearly at the apex of the heart, is proof that the mitral valves close completely, not allowing any blood to regurgitate into the auricle; and that the aortic valves and orifice offer no obstacle to the direct passage of the blood out of the left ventricle. If then the mitral valves be deficient, so that they cannot shut perfectly during the rush of blood against them, the stream of blood not stopping there, re enters the auricle, causing a noise, but not the *characteristic tick*. If the aortic valves be stiffened or roughened, or the aortic opening constricted, so that the stream of blood, in its onward course, is interfered with, it then rubs against this obstacle, and thereby causes a noise or murmur, at the same time, when the closure of the mitral valve would give the first tick. And if the *mitral valves* be deficient, and, at the same time, the aortic valves stiffened and roughened, or the aortic opening constricted, then the stream of blood must inevitably regurgitate through the auriculo-ventricular opening, and also rub against the obstacles in the aortic opening and cause a noise, but not the characteristic tick. An increase of the second or diastolic sound of the pulmonary artery, is almost always attended with insufficiency of the mitral valves. And, an increase of the *second sound* of the pulmonary artery, and a noise over the aorta, shows that there is *insufficiency* of the *mitral valves* and a *constriction* of the *aortic orifice* combined. If we hear a murmur or noise, instead of the second sound, over the aorta, we may know there is insufficiency of the aortic valves. And in case there is a thickening of the mitral valves, or constriction of the auriculo-ventricular opening, the blood accumulating in the lesser circuit, causes hypertrophy, with dilatation of the right ventricle. In case the the auriculo-ventricular valves be insufficient, and, at the same time, the auriculo-ventricular opening be constricted, then there would be a see-saw sound. Valvular diseases are rare on the right side of the heart, and when they do occur, it is mostly in connection with diseases of the left side. An *anæmic murmur* is a soft sound, like the blowing of a pair of bellows, but it is sometimes like that of filing or sawing, and is heard over the aortic valves.

Pericarditis.—The internal layer of the pericardium is a serous membrane, like that of the pleura, and hence, when inflamed, it

presents similar post mortem appearances. These are injection, exudation, and swelling. During the inflammatory process the injected capillaries may become ruptured, which causes bloody exudation. If pus globules should form in great abundance the exudation becomes purulent, and, should the exudation undergo decomposition; it exhibits a foetid, discolored, ichorous appearance, as in empyema. A serious exudation is readily absorbed again, but if it be of fibrinous character it gives rise to adhesions between the heart and the pericardium. If there be very large quantities of this fluid the heart is pushed back from the thoracic walls; its movements interfered with, and at the same time the lung very much compressed. Congestion of the lungs, brain, and liver may result; also œdema of the lower extremities. Pericarditis may be the result of idjuries, or it may originate from taking cold; or from acute rheumatism. Pleurisy, pneumonia, or ulcerative processes of the ribs, vertebræ, œsophagus, stomach, liver, or lungs may also cause it, or it may follow Bright's disease, tuberculosis, disease of the valves, cancer, and fevers. Chronic pericarditis may result from abuse of spirituous liquors, violent exercise, and gouty affections, or it may follow the acute form of pericarditis, especially in rheumatic habits.

SYMPTOMS.—It is attended with fever, sometimes commencing with chills, and followed by heat and rapid pulse. There is also a sharp cutting pain in the region of the heart, which is increased by motion, deep inspiration, and also by external pressure. Dyspnoea is generally present; sometimes to such an extent as to prevent the patient's lying down without an extreme sense of impending suffocation. In some cases there is a short, dry, hacking cough, and if the patient can lie down at all, can only lie on the left side.

PHYSICAL SIGNS.—After two or three days, we may hear the friction sound; which takes place as soon as a deposit of fibrin is formed, within the pericardium. This friction sound is seldom synchronous with the sound of the heart, but precedes or follows it.

INSPECTION.—In young persons, there may be a perceptible bulging out of the præcordial region, from the quantity of exudation distending the chest.

PALPATION.—In the beginning of the disease palpation reveals a strong impulse of the heart at its normal place; but later this becomes weaker and finally ceases. When the loud friction sound takes place, it feels like the purring of a cat.

PERCUSSION.—At the outset percussion reveals nothing. As soon however as exudation takes place the dull percussion sound of the heart extends over a large space, but if the lung happens to cover the filled pericardium, we fail to get the sound at all. In the beginning exudation is confined to the base of the heart and the origin of the arteries, and hence, we look for the dulness of

the sound at these points. Later the dulness of sound may be found over the long diameter of the heart, and, if the effusion is considerable, in the transverse diameter. The pericardium contains two or three pounds of fluid, and the sound becomes dull from the second left costal cartilage to the lower border of the thorax, and from the right edge of the sternum to the middle of the left lateral region. Where pericarditis is a mere complication of some other disease, the course is less uniform, although the physical signs are similar to those mentioned above. When the disease is not complicated, it is quite easily cured, but when it is complicated with rheumatism, phthisis pulmonalis, gout, chronic bronchitis, and confirmed cases of dyspepsia, it is quite difficult to manage. Our prognosis should always be in accordance with the complications existing in each individual case.

TREATMENT.—At the outset, treat the fever, the pain in the heart, and dyspnoea with aconite, in doses of gtt. 1 every hour; until the pulse is controlled. If, after the fever is moderated, there still remains pain in the region of the heart, bryonia in doses of gtt. 1 to 3 every three hours, will generally give relief. If there be a sensation of stricture in the heart, preventing its mobility, and a sense of suffocation, faintness, cold perspiration on the face, and palpitation, then *cereus grandiflorus* is one of the main remedies, and I usually give it in doses of gtt. 10 to 20, every fifteen minutes until it brings relief, and then in doses of gtt. 5, every hour for some days after. If there be rheumatism connected with pericarditis, a copious exudation of serum, irregular, intermitting pulse, and a brick-dust colored sediment in the urine, I find *digitalis* required in doses of gtt. 10 to 15, of the saturated tincture. I carefully watch its effects, for it is liable to produce dangerous sedation in some subjects. I prescribe every two or three hours, until it controls the action of the heart, and acts upon the kidneys. As soon as the friction sound is heard, give small doses of *spigelia*.

Hydropericardium.—This disease consists of a collection of serum without fibrin. A fibrinous exudation never takes place without an inflammatory process preceding it. The serum in hydropericardium is clear, and of a yellowish color, but if mixed with blood, is brownish or reddish, and of an alkaline reaction. A small quantity of such a fluid is generally found in post-mortem examinations, and when dropsy of the pericardium exists several ounces of it are found within the sac. The pericardium is much distended, is without luster, and of a dull whitish color. The fat upon the heart is also gone, the cellular tissue oedematous; while the heart becomes compressed, and the chest enlarged. This disease takes place generally in consequence of an hydræmic condition of the blood, or in consequence of some other disease which causes a general dropsical tendency in the system. Such are enlarged spleen,

Bright's disease, cancer, anæmia, dilatation of the right ventricle; and hypertrophy of the heart, etc. It may result also from obstruction of the circulation, (as in emphysema,) cirrhosis of the lungs, defects of valves of the heart after pleurisy or pneumonia. Hydropericardium generally originates from some other disease.

SYMPTOMS.—The symptoms are rather obscure, until there is a large collection of serum within the pericardium, when there is dyspnoea. This prevents the patient from assuming a reclining position, attempting to do so causing at once a sense of suffocation. There is apt to be a collection of dropsy in other parts of the body, and the jugular veins enlarge. As the dropsical accumulation invades the other portions of the body, the respiration is impeded, the circulation much retarded, and finally the patient falls into a stupor, which ends in his death.

PHYSICAL SIGNS.—There is an absence of friction sound, and a distention of the præcordial region in young persons. The impulse of the heart is weak or absent; and precussion sounds are dull and wider in circumference than in a healthy state.

TREATMENT.—This form of dropsy should be met with the remedies advised in hydrothorax. I have found small doses of digitalis, alternated with apocynum cannabinum to be effective in stimulating absorption and the acetate of potassium successful as a diuretic to remove the fluid. In some cases that I have recently treated from my dispensary, I have been quite successful with large doses of infusions of pipsissewa, polytrichum juniperum, (hair cap moss) and apocynum cannabinum, alternated with nitrate of potassium, in doses say of gr. 2 to 3, three times a day, in a large quantity of water. This nitrate acts powerfully upon the kidneys, in moderate dose, but if given largely it purges, and is liable to irritate the stomach and bowels. In one or two instances, after using other diuretics for some time unsuccessfully, I have given gtt. 30 to 60 of tincture of senecio aureus with each dose of the diuretics, and have succeeded in rapidly removing the serum. In this form of dropsy, like all other forms of the disease, to effect a radical cure, we must enrich the blood after removing the serum. To do this, requires not only iron, but also such other remedies as directly tend to stimulate the blood-making functions. In this class helonias dioica stands at the head of the list. I give it alternated with iron. If hydropericardium has followed some disease exhausting the blood, I give tincture of cinchonia, in small doses. Huxham's tincture is also a good preparation for this purpose.

Insufficiency of the Mitral or Bicuspid Valves.—If there exists a deficiency in the mitral or bicuspid valves, the blood regurgitates into the left auricle during the systole, thus checking the full flow of the blood through the pulmonary vein. This deficiency causes an undue accumulation of blood in the lungs, causing the

blood to be forced backwards into the pulmonary artery, widening its volume, and producing a louder second-tick. The increased second-tick of the pulmonary artery is the characteristic symptom of valvular insufficiency. Check of the pulmonary circulation also causes dilatation and hypertrophy of the right ventricle. Finally this increase of power in the right ventricle diminishes again, the veins of the lungs become overcharged with blood; the venæ cavæ are also surcharged, and in consequence, the liver, spleen and kidneys become hyperæmic, a condition which finally leads to general dropsy. This stagnation of the pulmonary circulation may also lead to dyspnoea, bronchitis, periodical hæmorrhages of the lungs hyperæmia of the brain and cyanosis. If valvular insufficiency exists, the diastolic sound will be replaced by a noise at the point where the apex strikes the thoracic wall. The diastolic sound of the pulmonary artery is much increased, and the natural dull percussion sound of the heart extends further in breadth, on account of the dilation of the *right ventricle*.

Constriction of the Left Auriculo Ventricular Opening.

—Constriction of this aperture prevents a due quantity of blood from passing through into the left ventricle, and so causes an accumulation of blood in the left auricle, and there is a check to the flow of blood in the pulmonary vein. This causes an over-filling of the lungs, and a greater pressure backward into the pulmonary artery. The necessary consequences are detailed in the treatment of mitral valves. The deficiency of blood circulating through the aorta and the left ventricle causes the aorta to become narrowed, and the left ventricle to grow smaller. The sound at the heart's apex, is like the purring of a cat, the diastolic sound of the pulmonary artery is louder, and the dull percussion sound is heard further to the right side of the chest.

Defective Aortic Valves.—The aortic valves are liable to become so defective that they do not close up completely, and consequently the blood is driven into the aorta during the heart's systole, but rushes back into the left ventricle, and causes an undue quantity to accumulate there. The blood accumulated in the thickening, causes it to make a greater effort to expel this blood. This overaction produces dilation and thickening, and so gives rise to eccentric hypertrophy of the left ventricle. The defective aortic valves are counterbalanced by the increased size of the left ventricle. And for a time there may be neither dropsy nor cyanosis. But there is apt, however, to be more or less congestion of the brain, as shown by dizziness, noise in the ears, flickering before the eyes, headache, red face and at times hallucinations.

SIGNS.—The diastolic sound is louder and more distinct, and there exists great extension of the dull percussion in the heart's long axis. The impulse is lower down, and the pulse is short, jerky and wiry, there is strong pulsation in the carotids.

Constriction of the Aortic Opening.—One of the first indications of constriction of the aortic opening is deficient circulation, followed by paleness, small and thread-like pulse, fits of fainting, coolness of the skin and extremities, and anæmia of the brain, etc. As the disease advances the veins become overcharged with blood, dyspnœa sets in, and not unfrequently cyanosis supervenes, accompanied by other symptoms of diseased heart.

PHYSICAL SIGNS.—Systolic murmur is one of the prominent physical signs, and can be heard in the carotids. There are dull percussion sounds, somewhat extended towards the longitudinal axis of the heart, and in consequence, dilation and hypertrophy of the left ventricle follow. The displacement of the apex of the heart outside of the nipple* line, and the small, wiry, irregular and thread-like, pulse are all common signs of this affection.

Defective Tricuspid Valves.—This defect allows the blood to flow back into the right auricle, when the heart contracts. The retrograde stream of blood flows into the venæ cavæ and jugular veins and imparts pulsation to these veins, simultaneously with the arterial pulsation. This flow of the blood causes overfilling of all the veins, and this is followed by hyperæmia, cyanosis, and finally, either partial, or complete dropsy.

PHYSICAL SIGNS.—In this disease the systolic murmur is heard in the right ventricle; and there will be pulsation and enlargement of the jugular veins. Dull percussion sound will now be heard in the direction of the breadth of the heart, from the right auricles having become enlarged. Their affection often results from disease of the other valves, and consequently, it is attended by all the physical signs and disturbances given above.

TREATMENT OF VALVULAR DISEASES OF THE HEART.—The treatment will have to be varied to suit each individual peculiarity and complication. Simple disease of the valve may point to certain remedies, and other complications must also be met by proper treatment. The diet must not be stimulating and all stimulants as coffee and tobacco must be avoided. The most effective remedy for defective valves, is tinc. of arsenic, in doses of gtt. 1 or 2, three times a day. To quiet the heart, small doses of *lycopus* and *cereus grandiflorus* may be administered every two hours through the day and in extreme cases, at night also. In some instances, in addition to this remedy, I have used small doses of belladonna, three times a day, with good results. My usual dose is from gtt. 5 to 15, in alternation with *convallaria maj.* Where there is anæmia, I give the pyrophosphate of iron, in doses of gr. 1 to 2, in the form of a syrup, three times a day. If there be evident signs of congestion of the lungs, the tincture of phosphorus, in doses of gtt. 1 to 2, three or four times a day, will be found invaluable. These valvular diseases are generally so soon complicated with others, that it is impossible

to lay down any positive guide for their treatment. If dropsy supervene, a special course of therapeutics will be necessary. If the heart becomes enlarged, that too will require special treatment. The disease also is liable to end in dilatation, hypertrophy and softening of the heart's walls, all of which must in time receive due attention.

Endocarditis.—Post mortem examination shows the lining membrane of the heart injected, reddened, swollen and covered with a fine fringe-like substance. These finally change into a papillæ and wart-like excrescences, which consist of softened endocardium. The chordæ tendinæ and valves are often torn loose by this softening process, and in some cases the endocardium itself, is torn at the place where it covers the heart muscles, and the blood rushing into it, so distends and softens the heart muscles, that it constitutes an acute heart *aneurism*. Adhesion of the chordæ tendinæ and points of the valves, either between themselves or with the walls of the heart, and myocarditis may also result from an extension of the inflammation. *Emboli* may result from particles of coagulated fibrinous exudation, being driven with the stream of blood into the arteries. These emboli may cause abscesses, apoplectic clots, or should they block up the larger vessels of the lower extremities, they may cause gangrene. Endocarditis is generally found in the left ventricle, in consequence of metastasis during an attack of acute rheumatism of the joints. Especially is this the case where several of the joints are affected at the same time. It may be associated with pericarditis, myo-carditis, with the acute form of Bright's disease, or it may even follow scarlet fever, puerperal fever, typhus fever, and measles. Its invasion during these affections, may be unnoticed; for the patient seldom complains of pain in the region of the heart when thus attacked, except in cases of rheumatism.

SYMPTOMS.—Palpitation of the heart, and a soft, compressible and small pulse, are the early indications of this disease. Dyspnœa is a marked symptom, and is severe in proportion to the amount of complication with the respiratory organs. If the lungs are much involved in the morbid process, there may be quick and unequal respiration, fainting, congestion of the brain, headache, delirium, sleeplessness, stupor, or even coma.

PHYSICAL SIGNS.—The sounds of the heart are heard over a larger space than in health, and are stronger than natural at the outset of the disease. In place of the first tick, we hear a murmur from the diseased valves, and the arterial tick is increased.

PERCUSSION.—This, at first, reveals nothing to guide us in the diagnosis, but after a few days, there will be a dull sound over a greater space than there is in health, by reason of the dilated condition of the right ventricle, from impeded circulation. This dis-

ease can be successfully treated, or it may leave behind diseases of the valves, such as thickening, adhesions, or perforation, and in consequence, there may be dilation and hypertrophy of the heart. It is a serious disease.

TREATMENT.—If there is rheumatism connected with it, and pain in the pre-cordial regions, causing great anxiety, palpitation, with irregular, intermitting pulse and dyspnoea, then small doses of the chloride of gold, three times a day, will act well. The dose need not to exceed gr. $\frac{1}{3}$. Follow this with gtt. 5 to 10 of the tincture of spigelia every two hours, or gtt. 1, of the tincture of convallaria. If the pain in the region of the heart is of a cutting or cramp-like character, gtt. 10 to 15 of tincture of cereus grandiflorus, should be given every ten or fifteen minutes, until the pain is more or less relieved. If there be stagnation of the pulmonary circulation, then the carb. of ammonium is required. Give aconite if there be high fever.

Hypertrophy and Dilatation of the Heart.—Hypertrophy of the heart consists of an increase of its muscular mass, or the thickening of the walls, whereby the capacity of the organ is diminished. This is the case in what is called *concentric hypertrophy*. There is still another form, where the muscle is increased in thickness, and at the same time the inner cavity enlarged. This is called *eccentric hypertrophy*. Sometimes only one half of the heart is enlarged or dilated. If the left ventricle is hypertrophied, the heart will be longer, and reach further down the left thorax, but if there is eccentric hypertrophy of the right ventricle, the heart will be broader, and will extend further over into the right thorax. Diseases of the valves and arteries, or obstruction of the circulation in the capillaries of the lungs are prime sources of both hypertrophy and dilatation of the heart. Pericarditis and myocarditis, mental excitement, alcoholic spirits, excessive use of tea or coffee, may all aid in its production.

SIGNS.—Percussion, in hypertrophy, gives rise to a dull sound, transmitted in all directions; and the heart's pulse is so greatly augmented that the chest is shaken by it. The apex of the heart is lower and towards the left nipple line. Dilatation and hypertrophy of the left ventricle gives similar results. The percussion sound does not extend so far towards the right thorax in hypertrophy and dilatation of the left ventricle as it does in complete dilatation and hypertrophy. In hypertrophy and dilatation of the right ventricle the dull percussion sound is further towards the right side. The jugular veins swell and undulate, and very soon cyanosis takes place, accompanied not unfrequently by bleeding of the lungs, and dropsy.

TREATMENT.—For hypertrophy of the heart from obstruction of the portal circulation, gtt. 3 to 5 of nux vomica three times

times a day, produce good results. If the disease is from valvular deficiency, give collinsonia, in doses of gtt. 10 to 20, three times a day, alternated with gtt. 2 to 3 of tinct. of arsenic every three hours. To control the palpitation of the heart, I have used *cereus grandiflorus* and *lycopus virg.*, in doses of gtt. 10 to 15 every two hours. If the disease is associated with rheumatism, gtt. 2 to 3 of *kalmia augustifolia* may be given three or four times a day. If the hypertrophy and dilatation is from mitral insufficiency or aortic constriction and there is an irritable heart, then *digitalis*, in doses of gtt. 5, every three hours, will give tone to the muscles of the heart. If there be valvular disease preceding hypertrophy, the iodide of arsenic is a valuable remedy, and may be given in doses of gr. 1-10. If the disease has followed acute, or exists with, chronic rheumatism, I then use tincture of *colchicum*, in doses of gtt. 10 to 15 every three hours, until the pain at the heart is subdued. Should this fail I would employ carb. or benzoate of lithium. If there be a sharp pain in the region of the heart, *bryonia*, in doses of gtt. 2, every two hours, alternated with gtt. 5 of *spigelia*, will be apt to give relief. If the patient suffers from a cramping pain, like a band around the heart, I have always found that the tincture of *cereus grandiflorus* would give quick relief. This is also the remedy for simple nervous palpitation of the heart. If there be a tight cough, congestion of the lungs, over-sensitiveness to external impressions, palpitation from emotions, great debility, fatty degeneration of the heart, dyspnœa, and these in dilatation following endocarditis, then gtt. 1 to 2 of the tincture of phosphorus, three times a day, has a good effect. If dilatation and hypertrophy of the left ventricle, dyspnœa, and very frequent spells of palpitation exist, very small doses of the acetate of lead may be given three times a day, gr. $\frac{1}{8}$ to $\frac{1}{4}$. Gr. $\frac{1}{8}$ is enough in most cases. If anæmia, or chlorosis show itself in young girls, I advise the pyrophosphate of iron with other proper remedies. In many cases that I had at my dispensary, hæmorrhage of the lungs was quite frequent, and I have found *lycopus virg.* one of our most trustworthy remedies. I usually give the infusion, or saturated tincture, according to age.

Nervous Palpitation of the Heart.—This form of palpitation does not occur regularly, but as occasional paroxysms, it often attends organic disease of the heart. During the attack, the face may be red, and the pulse full and large, or the face pale, and the pulse small and irregular. Some have dizziness and roaring in the ears, headache, flickering before the eyes, fainting spells, and great dyspnœa,

CAUSES.—One of the most frequent causes is anæmia or chlorosis. It also often occurs in women about their climateric period; also, in hysterical women, especially if any uterine disease or irregularity exists. It results often from sexual excesses, or it may be the re-

sult of spinal irritation, or reflex nervous irritation from worms. Occasionally it sets in without any apparent cause. In our examination, we should not depend upon sounds during a spell of palpitation, but examine the heart in the interval between the spells, as there are unusual sounds during palpitation, which do not exist at other times. We must therefore be careful in our examinations, or we may be deceived.

TREATMENT.—Generally in cases of young persons, after excitement or fright, aconite, in gtt. $\frac{1}{2}$ doses, every half hour, will allay the attacks of palpitation. In women, after suppression of the menses, or in the case of those who are hysterical, medium doses of the tincture of *asafoetida*, is generally all that is required, with such other remedies as the general constitutional conditions point out. If there is coldness of the skin and extremities, paleness of the face and great dyspnoea, then use gtt. 3 to 5 of the saturated tincture of camphor, every ten minutes, until relief is afforded. If this affection follows long continued nursing, or loss of blood, small doses of the tincture of bark will often be required. In cases of tremulous palpitation following unusual exertion or mental emotion, *coccus indicus*, in doses of gtt. 3 to 5, every two hours, will frequently relieve the spells. If the patient be anæmic, then pyrophosphite of iron should be given for some time. If the affection occur in young girls from suppressed menses, I administer gtt. 10 to 15, of *pulsatilla*, until the menses are restored to their normal quantity.

Angina Pectoris.—This is a pressing, aching pain in the middle of the sternum, which comes on suddenly, and almost suspends the breathing. It gradually increases in violence, and spreads from the middle of the sternum, towards the left plexus brachialis, and thence to the hands and feet; but seldom attacks the right side. The patient suffers great pain and dyspnoea; the countenance becomes pale, the front part of the head is covered with a cold perspiration. These paroxysms may terminate in about half an hour, with eructations of gas from the stomach, and may, or may not return again. In some cases the heart's action is increased, and in others, diminished. The spells may occur only occasionally, or they may occur daily. They are generally associated with some organic disease of the heart, such as aneurism of the aorta, fatty degeneration of the heart, and ossification of the coronoid arteries. This is always a grave disease.

TREATMENT.—For the relief of the paroxysm the inhalation of gtt. 5 of nitrite of amyl every few minutes, for two or three doses, is invaluable. At the same time the patient should take gtt. 20 of *cereus grandiflorus* every ten or fifteen minutes, until he is relieved. This remedy seldom fails to quickly relieve the paroxysm. I gave a gentleman in the city of Atlanta, three or four drachms, in the course of a few hours one night, and it relieved him of one of the

worst cases of angina pectoris I ever witnessed. After relieving the patient, we should carefully examine him to ascertain what organic heart affection gave rise to the angina. Then, when our diagnosis is made out, we should treat whatever disease of the heart may exist. If it be ossification of any of the arterial trunks, our treatment can only be palliative. I usually give a course of Fowler's solution, alternated with the carbonate of potassium. If there be fatty degeneration of the heart, our prognosis is very grave, and a sparse and low diet should be prescribed.

Diaphragmitis.—The tendinous tissue of the diaphragm is seldom ever primarily affected; but as the serous lining on its upper surface is a continuation of the pleura and pericardium, and that on its lower surface, of the peritoneum, it frequently suffers from participation with the pleura, the pericardium, and the peritoneum.

SYMPTOMS.—Dyspnœa is one of the direct indications of this disease, also singultus, yawning, risus sardonicus, pain in the shoulders, vomiting, great difficulty in swallowing and a feeling of extreme tightness, etc.

THERAPEUTICS.—Where there is a hard, quick, feverish pulse, thirst, anxiety, restlessness, painful cough, great dyspnœa, and pain and heat in the region of the diaphragm, I use gtt. 1 or 2 of aconite, every hour, until the pulse is slower and softer, and then half the quantity to keep down the inflammation. If there still be great pain, I give gtt. 1 or 2 of bryonia every one or two hours until the pain ceases. If the pain be of a rheumatic character, gtt. 1 to 2 of rhus tox. should be given every two or three hours, until the patient is relieved.

CHAPTER V.

DISEASES OF THE DIGESTIVE ORGANS.

Dyspepsia.—Indigestion is a common disease of the age. So common is it, indeed, that almost the entire population are dyspeptics. The disorder includes every grade of severity, from a mild type. to the extreme, torturing soul beclouding, life-embittering disease that converts the bright sunshine of life into the dark shadows of the grave. It sits like an incubus upon the very soul of man. Indigestion may result from anatomical changes in the digestive organs, as inflammation, catarrh, thickening of the coats of the stomach, ulceration, eruption upon the mucous tissue, cancer of the stomach, or softening, etc., Again it may be caused by a deficiency of gastric fluid. or chemical constituents of that fluid. It may also originate from a want of pancreatic fluid, or of biliary secretion. An abnormal condition of the nervous system may give rise to it, or it may be the result of using stimulating drinks, or of improper food. The use of tobacco is a great factor in the production of this disease. Sedentary habits and excessive mental application, may also combine to produce it.

SYMPTOMS.—The symptoms are so various that it is difficult to enumerate them. I shall therefore only give such as are most prominent and common. In some cases there is a want of appetite, and in others a morbid one, with a craving for sour articles of diet and drink. Palpitation of the heart accompanies the disease, especially in those cases characterized by the accumulation of gas upon the stomach. Many cases are accompanied by great and rapid accumulation of acid upon the stomach; the patient having more or less rancid eructations, pyrosis, or *heartburn*, and water-brash every day. In some cases of long standing, the patient's digestion becomes so much impaired that nothing seems to digest, and he may have vomiting or diarrhœa in consequence. There is often tenderness over the pit of the stomach, which seems to the patient as if it were full, and sometimes very much swollen. The mind is depressed, incapacitating the subjects for mental or bodily work, and they become morose and irritable, and are disturbed at night by dreams. The expression is relaxed, tired, weary, and sad, with dull sunken eyes, and lips generally pale. The flesh diminishes rapidly, the hands and feet are generally cold, and the whole body becomes very sensitive to cold changes. The teeth often decay from excess of acid in the blood, and the patient suffers often from toothache and neuralgia about the face and head. The bowels are

either loose or constipated. Patients very frequently complain of pain over the region of the stomach and in the neighborhood of the liver, which sometimes radiates the left scapula. There is occasionally, also, roughness in the throat, causing the patient to hawk up a tough phlegm. If the liver is implicated, which is often the case, there will be a hacking cough. The tongue is furred very frequently; red at the tip and edges and there is a bad taste in the mouth.

TREATMENT.—One of the first things to be done is to put the patient upon a proper diet. He should be confined to such articles of food as are best suited to his particular case. If he use tobacco, he must be informed at once that it is *violent poison, and the most powerful relaxant in nature*. It is the prime factor in the production of dyspepsia, and he should be advised to relinquish it at once, thus doing much towards curing the disease. He should also be prohibited from the use of large quantities of drinks. A glass of fresh sweet milk is most suitable for the majority of patients. Some can use no other diet but bread and milk, while others can take a small quantity of fish, fowl, tender beef, mutton, or kid, without injury. Whatever the patient digests with the greatest ease should be partaken of in great moderation. As much of the cure depends upon the proper kind and quantity of food, as upon medicine, and without strict dieting, no cure can be accomplished. Among the vast list of tonics I have tried, but few are available in this disease. In recent cases, or in acute dyspepsia, especially when it occurs in summer, and is caused by high living, or excessive use of acid fruits; and where, too the tongue and mouth are inclined to dryness, and there is yellowish coating on the tongue, accompanied by apthæ; bitter belching; great soreness of the epigastrium; nausea; distension of the bowels; sensation of fulness in the stomach; water brash; jaundice; congestive headache; *obstinate constipation*, and disgust for food, bryonia in doses of gtt. 1 or 2, one hour before meals, will give appetite, tone up the stomach, and act on all the secretions concerned in the digestive process. In some cases, where eating is followed by keen pain (*which is generally due to ulcer of the stomach*), I give oxide of bismuth, in doses of gr. 3 to 5, one hour before meals; should this fail I use gtt. 2 to 3 of the tinct. of arsenic, in a wine glass of water, before meals. If the bowels are not regulated by the use of bryonia, I give gtt. 3 to 5 of the tincture of nux vomica, one hour before each meal. Where the mouth is dry and clammy of a morning, and there is *heartburn*, berberis vulgaris is a valuable remedy, and has been frequently successful. In females who are feeble, and whose catamenia are irregular or deficient; where there exists nausea; disgust of food; vertigo; slow digestion; constipation; flatulence and sleeplessness, aletris farinosa is a valuable remedy,

in doses of gtt. 25 to 30 of the fluid extract, every three or four hours. If the tongue is white, dry, streaked, narrow and pointed, and there is an aching, gnawing pain in the stomach, with a sense of constriction, aggravated by pressure, a desire for milk and hot food, colic and wind in the bowels, constipation, morose disposition, and pain in the side, radiating to the left scapula, chelidonium, in gtt. 10 to 15 doses, three times a day will soon restore the biliary secretion and relieve the above symptoms. Should this fail, the tincture of euonymus atropurpureus may be given in doses of gtt. 20 to 30, three times a day between meals. This drug acts finely upon the secretory organs. Cornus circ. is a valuable remedy where there is constant nausea, a bitter taste in the mouth, and aversion to all kinds of common food; the dose is gtt. 30 to 40 of the tincture, before meals. When dyspepsia is attended with prostration, nervous headache, flat taste, craving for certain articles of food, regurgitation and painful bloating after meals, small doses, say gtt. 1 to 2 of ignatia amara may be given before meals. Where there is great lassitude, exhaustion, obstinate constipation, dull headache, frequent desire to urinate, wind in the bowels, large, flabby, slimy tongue, sour eructations, dyspnoea, palpitation of the heart, pyrosis, stitches in the epigastrium, chronic mucous discharges and great weakness, gtt. 10 to 15 of hydrastis canadensis, before each meal will aid digestion. If anæmia exists (*as is often the case,*) with prostration and albuminuria or diabetes, helonias dioica, in doses of gtt. 2 to 5, every three hours is one of our best remedies. Where there is nausea and vomiting, pain in the umbilical region, yellow, watery, corrosive stools and a burning sensation in the rectum, iris versicolor in gtt. 1 to 2 doses three times a day will bring relief. Should the patient have a sweet taste in the mouth, or an acid and putrid taste, with constant flow of saliva, excessive thirst, aversion to animal diet, sensation of emptiness in the stomach and drowsiness, muriatic acid, in doses of gtt. 2 to 3 before meals, diluted with cold water, will do good service; I have used it frequently with happy results. In cases attended by nervous prostration from the loss of *vital fluids*, phosphoric acid, (Horsford's Acid Phosphate in doses of gtt. 20 to 30,) is always valuable. For excessive acidity of the stomach, if the above acids do not give relief, robina in gtt. 5 doses, should be tried, as it lessens this tendency very much. Where there is a craving for acids, a changeable appetite, putrid taste, foul breath, dryness of the mouth and throat, white fur on the tongue, pyrosis, sour eructations, regurgitation of the food, vomiting, with canine hunger, constipation, headache, prolapsus of the rectum after stool, morning diarrhoea, great depression of mind, tincture of podophyllum, in doses of gtt. 1 to 2, four times a day will very materially aid in the cure. Where there is a bitter slimy taste; a feeling of

tightness after meals; epigastric pains; a want of appetite; bitter vomiting; flatulence; and when bread disagrees with the patient; where there is water-brash; hiccough; colic and pains in the bowels, gtt. 1 to 2 of tincture of pulsatilla, three times a day, generally gives immediate relief. The hypophosphites of lime, sodium, and magnesium in the form of compound syrup, in several instances have done me good service. Many cases of this disease are the results of an exhausted condition of the nerve centres, and continued use of the phosphites is required to restore proper nervous tonicity. Where the gastric, pancreatic and salivary fluids are deficient, I have found Lactopeptine of essential service, when given just after meals. Various tonics have been known to effect a cure but the above have proved most successful with me.

Acute Gastritis.—Catarrh of the stomach, in the acute form, is similar, in a pathological point of view, to catarrhal inflammation of any other mucous tissue. There is swelling, redness, and often a tough, transparent, or grayish-white slime over the membrane after death, the mucous membrane is so softened as to be easily scraped off like a mushy covering of the tissues.

CAUSES.—Cold or wetting may cause this inflammation, or very cold or very hot food and drinks may produce the same result, so, too, with alcoholic drinks, ice cream and ice water.

SYMPTOMS.—In the outset there may be a chill, accompanied by paleness of the face and cold extremities. Later, the chilliness alternates with flushes of heat, and the face becomes red and hot with high fibrile reaction. The patient then complains of soreness, fulness, and a burning pain at the pit of the stomach. The appetite is suspended, but the patient is apt to crave water, and if indulged, will vomit. There is constantly a belching up of gas, although the stomach still feels full. If the bowels are implicated, the stools become fetid and mushy.

TREATMENT.—Where there is great thirst and pain in the stomach, with burning nausea and vomiting, gtt. 25 of aconite in $\frac{3}{4}$ of water, in doses of a teaspoonful, may be alternated with drop doses of tincture of arnica every two hours.

If, however, the tongue is dry, without thirst, and there is constipation, gtt. 10 or 15 of bryonia should be added to $\frac{3}{4}$ of water, and given to the patient in doses of a teaspoonful, every two hours. If constant sour and rancid belching exists, with a bloated condition of the stomach and bowels, vegetable charcoal in small doses acts admirably every hour. When there is present a bitter taste in the mouth, vomiting of green bile, constant rumbling in the bowels nervousness, sleeplessness, with an impatient, fretful frame of mind, chamomilla (gtt. 8 or 10 of the infusion in a glass of water), taken in doses of a teaspoonful every two hours, will gen-

erally correct the above symptoms. If the disease is caused by eating sour, unripe fruit, and attended with constant vomiting, followed by diarrhœa, then small doses of ipecac. should be given, say gtt. 1 to 2 every hour or oftener, in urgent cases. If the disease be attendant upon the use of alcoholic stimulants, I have found *nux vomica* one of the best remedies, the dose not exceeding gtt. 4 or 5 every two or three hours. I use the saturated tincture of this as well as of all other remedies.

Chronic Gastritis.—A chronic form of inflammation of the stomach often follows badly managed attacks of the acute form of the disease, but is also sometimes produced by the abuse of spirituous liquors, excessive use of coffee, tea and tobacco. It often follows gluttony and sedentary habits; or may be secondarily produced by gout, anæmia, chlorosis, Bright's disease, marasmus, tuberculosis, cancer, and hæmorrhoids. Especially is this the case in impressionable constitutions, and young persons.

SYMPTOMS.—One very common symptom is belching of an acid character after eating, attended with *heartburn*. Another quite common symptom is a full feeling in the stomach, with actual distention of the organ. The appetite is frequently very poor, and the tongue coated red at the tip and edges, with constant pain in the stomach, which is worse after meals. The mind is gloomy, morose, irritable and hopeless, and the skin dry, hard and pale. The patient becomes emaciated and very feeble, and often has palpitation of the heart, with great dyspnœa. The disease generally progresses slowly, and most commonly terminates in softening of the stomach, which may end in death. It may on the other hand end in ulceration of the mucous coat, which finally proves fatal, if not met by timely treatment.

TREATMENT.—In the treatment of chronic gastritis I have found the subnitrate of bismuth to have an almost specific effect when given in doses of gr. 6 of the powder, or I use liquid bismuth in doses of gtt. 30 to 60 every three hours. After failure with the bismuth, in occasional cases, I have found the tincture of arsenic, in doses of gtt. 1 to 2, three or four times a day, effective in relieving the pain. If there be constant sour stomach, I have found *nux vomica*, alternated with *robina*, gtt. 5 each, to give relief. In some cases, I have been successful with gtt. 5 to 10, of tincture of capsicum, repeated three or four times a day. Should the patient have much mucus in his mouth and stomach, *pulsatilla*, in doses of gtt. 4 to 5, before meals, has generally done well. If there is nausea and vomiting of bile, gtt. 1 to 2, each of ipecac. and chamomilla, every three hours, will afford relief. *Hydrastis canadensis*, gtt. 5, of the tincture, every four hours, has answered well in many cases that I have treated. Nausea, headache, painful burning in the stomach, intense thirst, red tongue, and dryness of lips,

should be treated with gtt. 1 to 2 of tincture of sanguinaria. The dose may be repeated every two hours, until it relieves. In some cases where there is great tendency to sour belching, podophyllum, in doses of gtt. $\frac{1}{2}$ to 1, has acted well. I use the saturated tincture of the fresh root.

Gastralgia.—Gastralgia is a paroxysmal and painful affection of the stomach, without structural change of tissue. It sometimes is associated with anæmia, chlorosis, tuberculosis or great loss of vital fluids, and may occur with chronic inflammation of the organ. It has also been known to attend cancer and ulcer of the stomach. It may attend irregular menstruation in women, and often occurs from chilling the stomach by drinking ice water or eating ice cream, whilst the body is heated; lemonade or other acid fruits, hot cakes, and articles of food of difficult digestion, may also produce it. It is generally sudden in its attack, the pain being pressing, drawing, burning, boring, gnawing, and cramp-like, and sometimes so intense, that the patient faints; his face appears collapsed, his hands and feet are cold, and his pulse thread-like and small. The pain may extend to the larynx, causing choking, or to the bowels, causing colic. The attack may end in belching of wind vomiting of sour fluid, or in diarrhœa. Occasionally the stomach is greatly distended with gas, and the belching up of the gas is followed by relief from pain. Some persons are very prone to attack, of this kind and will have it whenever they use acids, cabbages cucumbers, or other watery vegetables.

TREATMENT.—To relieve the attack, I have found the ethereal tincture of assafœdita, one of the most prompt remedies. Some times I give the tincture of dioscorea, in doses of gtt. 15 to 30, every fifteen minutes, alternated with gtt. 30 to 60 of the essence of peppermint. If there be indigestible food or acids in the stomach, an emetic of lobelia, or lobelia and ipecac. should be given at once, and if the cramp does not cease, any of the above remedies will do. To ward off attacks, the patient should avoid acids, acid fruits, watery vegetables, ice water, and large quantities of very cold water; and in addition, he should take small doses of the tincture of nux vomica before each meal for some time, to tone up the digestive apparatus. If the liver is inactive, he should take small doses of euonymin, celandine, or podophyllin, once or twice in the day, until the organ is restored to a normal state. The excessive use of tobacco often leads to this affection. In case it has been produced by the use of tobacco, ignatia amara is one of the best remedies we have; it may be given in doses of gtt. 3 to 4, an hour before each meal. If the pain is cutting, and extends to the bowels, I have found gtt. 2 or 3, of the tincture of colocynth, to check it readily. The patient should be careful in his diet.

Perforating Ulcer of the Stomach.—The pyloric portion of

the stomach is the most common seat of this form of ulcer. It may also appear in the duodenum. There may be one ulcer or there may be two or three. Sometimes they are small, again they are large. In shape, they are generally round or oval. They are small on the outside, and large on the inside and rather funnel-shaped where they perforate the stomach. As soon as the ulceration reaches the serous membranæ of the stomach, it gives rise to peritoneal inflammation and fibrinous exudation, which may cause adhesions to the pancreas, liver, omentum, and even to the colon. Violent hæmorrhage occurs in some cases from exposed vessels. It is possible to cure this form of ulceration of the stomach; in all of its stages, and when it heals granulations are formed, and a flat, radiating cicatrix is left instead of the ulcer. This process may contract the pylorus, so that the exit of food into the intestines is much impeded. Virchow believes that the ulcer has its origin in obstructions of arterial vessels, in consequence of which the mucous membrane is deprived of its wonted nutriment, and dies off, becoming deeper and deeper.

SYMPTOMS.—Gastralgia, or pain like gastralgia in the pit of the stomach, coming on in paroxysms, after meals, and sometimes ceasing after the vomiting of a slimy, tough, clear, tasteless or sour fluid, is the early indication of this form of ulcer. The face assumes a pale or yellowish color in a short time, and patient falls away in flesh more rapidly and becomes more morose and sad, than in nervous gastralgia. Vomiting sometimes occurs, and again may not occur very often. This ulcer always interferes with the process of digestion. The appetite may be impaired, or it may be good for a time, but eating generally causes pain, and digestion is always very slow. Milk and the tender parts of meat are the most easily digestible substances. The patient is very subject to pyrosis, nausea, and water-brash, and the bowels are generally constipated. When perforation takes place, there will be peritonitis immediately. The patient experiences a sharp cutting pain in the stomach and bowels, which is followed by a chill and violent vomiting. His features become distorted, pale, collapsed and expressive of extreme suffering and despondency. The abdomen soon becomes greatly distended and very painful, and so the respiration is superficial and short. Singultus and violent action of the heart set in, the pulse becomes small and cold, and this condition is followed by fainting spells and great prostration.

DIAGNOSIS.—This condition may be readily confounded with chronic catarrh of the stomach, but can be distinguished from it by the red clean tongue, and more frequent vomiting that occurs in ulcer. It is liable also to be mistaken for nervous cardialgia; but the rapid loss of flesh, the pale yellowish face, and the vomiting between the spells of pain, serve to distinguish between the

two diseases. Ulcer of the stomach and cancer of the stomach are often confused, but differ in the ulcers coming on earlier in life than cancer. Moreover, cancer causes more rapid loss of flesh, and is known by its hard swelling in the pit of the stomach, which never takes place in ulcer of the stomach until it heals up.

TREATMENT.—Very small doses of the tincture of arsenic, well diluted with water, is the most trustworthy remedy, and may be alternated with conium to relieve the pain. Atropin may occasionally be given instead of conium. After giving Fowler's solution for a few weeks, if no improvement appear, small doses of the bichromate of potassium should be tried. The diet must be fluid.

Cancer of the Stomach.—This disease may be divided into three forms, viz: (1) scirrhus, which is a fibrous growth, and generally originates in the sub-mucous cellular membrane, (2) carcinoma medullaris, which is a marrow-like growth, sponge-like in its development, and (3) carcinoma alveolaris, which is a soft growth, resembling jelly, forming upon the sub-mucous cellular-tissue but often penetrating to the peritoneum. These three kinds of cancer may exist in the same case. They oftener affect the pylorus than other parts, and if the disease exist long, adhesions to other organs are apt to form, especially with the pancreas, liver, kidneys, and sometimes the colon. The stomach becomes greatly enlarged, especially where the the pylorus is strictured. There is chronic inflammation of the mucous membrane near the seat of the cancer's growth, and decomposition of tissue often causes violent hæmorrhage of the stomach. The cause of the disease is not known.

SYMPTOMS.—The symptoms are very similar to those of ulcer of the stomach. The pain is more violent and radiating, however, than in ulcer, the skin is ashy colored, and it comes on in old age, generally after forty years of age.

TREATMENT.—The treatment can only mitigate the symptoms. When there are violent pains in the stomach, subnitrate of bismuth will relieve them as quickly as any other remedy, and may be given in doses gr. 2 to 4. If the pain, however, be of a burning character, no remedy is so positive in its effects as the tincture of arsenic in doses of gtt. 2 to 3 every three hours. Hydrastis canadensis, is a very valuable remedy, and may be given in the form of powder. gr. 1 to 5 or a fluid extract, gtt. 5 to 10, three times a day. I have seen this drug influence the disease in a very prompt manner, and as it is a direct tonic to the digestive powers it should always constitute a part of the therapeutics of this hitherto intractable disease. The American Indians, says Rafinesque, used this remedy in the treatment of cancer before it was known to the white race, and the testimony of some physicians is, that

there is no remedy that changes the condition of the patient as quickly as *hydrastis*. It acts upon the dyscrasia at once, causing rapid improvement. As it is harmless, it should be continued until health is restored, or as long as there is any hope of its doing good.

Hæmatemesis.—Hæmorrhage of the stomach consists of an extravasation from either the arteries, veins, or capillaries of the organ.

CAUSES.—There are two causes, viz: an increased and abnormal tendency of blood towards the vessels of the stomach, as in cases of congestion or catarrhal inflammation of the mucous membrane of the stomach. Diseases of the vena porta and liver and those which interfere with free circulation; constriction of the vena cava, in heart and lung diseases, and diseases causing a greater pressure of the blood in the mucous membrane of the stomach, all come under the first head. The hæmorrhage may be capillary, only, or it may be profuse, provided that the pressure is great enough to rupture the larger blood vessels. Such conditions follow suppression of menstruation in females, and the development of hæmorrhoidal tumors. The second cause consists in impairment of the texture of the coats of the vessels, either from chemical or mechanical influences. Among such are alkaline or corroding chemicals, pointed mechanical substances within the stomach, violent straining in vomiting, or the effects of a contused wound from a fall or knock upon the pit of the stomach. Certain pathological conditions may give rise to this form of hæmorrhage, as varicosis, and aneurism of the arteries. Scurvy, yellow fever, and some acute exanthematic fevers produce it; as do also ulceration of the stomach, cancer and hæmorrhagic erosions.

PATHOLOGIC CONDITIONS.—The mucous membranes are found injected, or pale and anæmic, and sometimes the mucous membrane is softened and easily detached. After profuse hæmorrhages, clots of blood will be seen, but where these hæmorrhages are slow, the blood is generally altered by the gastric juice into a mass like coffee grounds, as in yellow fever.

SYMPTOMS.—Where the blood flows freely enough to produce vomiting, there is no difficulty in the diagnosis, but where it does not produce this result, there will be a sense of warmth and fulness felt in the stomach, with paleness, small pulse, cold extremities, great depression, anxiety, ringing in the ears, flickering before the eyes, fainting, and dizziness. Sometimes there is no blood thrown up in which case it passes off from the bowels, giving the fæces the appearance of tar. It may be distinguished from hæmorrhage of the lungs in various ways. In the latter disease there is generally cough, and the blood is coughed up. Hæmoptysis, too, is preceded by lung or heart disease, and is always attended by

cough. Hæmatemesis, most commonly, is preceded by disease of the stomach, and attended by nausea and vomiting. The blood, coughed or spit up in hæmorrhage of the lungs, is bright and frothy, while that from the stomach is dark and often rather decomposed. In hæmorrhage of the bowels, the blood is generally in masses unmixed with the fœces, but when ejected from the stomach, it is always mixed with them.

TREATMENT.—In many cases that I have had, I have been successful in arresting the hæmorrhage with small doses of Monsell's salt, in gr. 5 doses, dissolved in a wineglass full of water, and given every half hour, or according to the severity of the disease. If this drug is not at hand, the tincture of the oil of erigeron in doses of gtt. 20 to 30, every fifteen minutes in water, will produce a favorable result. If this cannot be procured, use tincture of hamamelis in gtt. 5 to 10 doses, every two or three hours, and if this is not effective, alternate with ipecac. in doses of gtt. 1 to 2, in water, or, gr. 4 or 5, of vegetable charcoal every half hour in water. Ergot is recommended but is not as certain as the iron or erigeron.

Gastromalacia.—In this disease, the coats of the stomach are found, upon post-mortem examination to be changed into a mass, which is easily detached with a scalpel. There are no signs of inflammatory, catarrhal, or ulcerative processes in the mucous membrane of the stomach, and the softened portion seems to pass off gradually over into the healthy tissue, without any sharply defined border.

SYMPTOMS.—One of the most noted symptoms is constant vomiting, and later in the disease there, is diarrhœa. I attended a man at Hamilton, Ga., who had been troubled with symptoms of gastromalacia for some time, and finally was taken with vomiting and hæmorrhage of the stomach. He vomited up large sheets of mucous membrane, which were very much thickened and easily broken up into a mushy substance. He died in a few hours from very free hæmorrhage of the stomach.

TREATMENT.—Nothing can be expected from treatment but a temporary suspension of fatal results. With this in view, give small doses of creosote, say gtt. 1 to 2, in a half glass of water, to be sipped occasionally by the patient. If the creosote does not relieve the hæmorrhage, gtt. 1 to 5, of tincture of hamamelis, may be given every ten or fifteen minutes, or Monsell's salt in doses of gr. 5. every hour.

CHAPTER VI.

DISEASES OF THE INTESTINAL CANAL.

Intestinal Catarrh.—The acute form of this disease presents the same appearance as is generally seen in catarrhal inflammation of the mucous membrane. These are injection, swelling and infiltration of the sub-mucous tissue of the intestines.

CAUSES.—It may be produced by overloading the stomach, excessive use of drastic purgatives, *patent pills*, taking cold, and mental emotions. In some cases it accompanies cancer, tuberculosis, typhus fever, puerperal fever, pneumonia, dentition in children, and extensive burns.

SYMPTOMS.—A catarrhal inflammation of the small intestines is generally associated with catarrh of the stomach, and is known by obstruction of the gall ducts, with jaundice as its result. Catarrhal inflammation of the colon generally involves the rectum, and then it is known by the spasmodic pains it produces in the sphincterani, and intestines, and the burning sensation at the anus. In all cases, diarrhœa is a prominent symptom, unless the upper portion of the small intestines alone are diseased, in which case, constipation will prevail. The stools may be watery, acrid, slimy, containing undigested food, and even bloody mucus. The frequency of the stools varies in proportion to the amount of inflammation. In severe cases there is fever and headache, and evacuations are preceded by sharp, cutting pains in the abdomen.

TREATMENT.—Where there are frequent scanty and loose stools with tenesmus, aconite and gelseminum are the remedies for the early stage. I usually order aconite gtt. 30, gelseminum $\bar{3}$ 1½ aqua pura $\bar{5}$ 2½, dose, gtt. 30 to 50, according to the urgency of the symptoms. If the disease occur in the summer, from the sudden changes, or after free indulgence in acid fruits, the tincture of bryonia in gtt. 1 to 2 doses may be given every two hours. If the disease follow chilling of the stomach with ice-water or ice cream, and there is great prostration and thirst, administer gtt. 1 to 2 of tincture of arsenic every four hours. If it occur in little children, and is attended by painful diarrhœa, bloated, hard abdomen, watery discharges, and greeny, slimy or undigested discharges, then chamomilla will give the best results. It must not be in larger doses than gtt. 5 to 10, in half a glass of water, and a teaspoonful given every hour or two is sufficient. If the stools are dark or yellow, with griping and tenesmus, nervous excitability and chillness, followed by flushes of heat and sweat, use

cornus circinnatus, in quantities of gtt. 5 to 10 of the tincture every two hours until relief is obtained. If the disease occur in children in dentition, and is accompanied with diarrhœa and vomiting, or spasms, gtt. 5 of ipecac in $\frac{3}{4}$ of water, should be given by the teaspoonful every fifteen minutes until relief is afforded. If there are painful greenish discharges, and burning in rectum, the tincture of iris versicolor, in doses of gtt. 1 to 2, every two hours, will correct the condition. If the diarrhœa changes constantly in color, at first green, then yellow and slimy, and now whitish, small doses of the tincture of podophyllum, say gtt. 1 every two hours, will often give relief. The dose must be small. If the catarrh occur during dentition, and is characterized by a peculiar sour smell of the child and its discharges, and if these discharges are fermented, green, brown, and attended with great pain, rhubarb, in the form of compound powder, or syrup, or the simple tincture, in small doses will frequently cut short the disease. If the disease be attended by cramps in the stomach and bowels, or with flatulence, then dioscorea, in doses of gtt. 10, alternated with gtt. 2 or 3 of collinsonia, will act well.

Chronic Intestinal Catarrh.—In this affection the mucous coat of the intestines appears of a brownish-red, livid gray, or slate color, and is also somewhat swollen and thickened. Its follicles are hypertrophied, and its surface is covered with a jelly-like slime of various colors. In some cases all the coats of the bowels are hypertrophied, and small excrescences beset the outer coat. The mucous membrane sometimes appears pale and anæmic, and there is infiltration of the submucous cellular tissue. This may only appear on the small intestines, or it may be diffused over the entire track.

CAUSES.—The chronic form of intestinal catarrh may be the result of repeated attacks of the acute form, or may originate from cancer, tuberculosis, typhus fever, cirrhosis of the liver, organic diseases of the heart and lungs, or obstruction to the portal circulation.

SYMPTOMS.—Diarrhœa and constipation alternate. The stools are thin and of various colors, mixed generally with slimy mucus, which is tough and jelly-like. There may be also distention of the bowels, from gas accumulated in them.

The mind is gloomy, hypochondriacal, and irritable, and emaciation gradually supervenes. The most frequent location of the disease is in the small intestines, in which case the patient complains of pain in the umbilical region, and there is most commonly constipation of the bowels.

TREATMENT.—If it is attended with burning pain, and the discharges are very offensive, thin and lumpy, and excoriate the anus; and if there be great thirst, restlessness, exhaustion and

emaciation, with crossness and despondency on the part of the patient, then tincture of arsenic in doses of gtt. 1 to 2 every three hours, will aid other proper remedies. Where the stools are dark and offensive, and mixed with some blood, and there is nausea, colic, tenesmus. pain in the hepatic region, and a typhoid tendency, baptisia in doses of gtt. 1 to 5 every three hours, will allay the symptoms. If the pain in the bowels be cutting, with loose discharges of a dark brown or black color, and great prostration, I find gtt. 5 of tincture of camphor every hour or two very useful. Where there is constant distention of the bowels with gas, a few drops of tincture of dioscorea villosa will do away with this trouble. I usually give gtt. 20 to 30 in mint water, or essence of mint and water. If the stools are green, and there is nausea and vomiting, ipecac, in doses of gtt. 1 to 2 of the tincture of the fresh root, will be an appropriate remedy. If severe griping and colic exist, with muco-gelatinous stools, and here and there shreds of yellow or green mucus, or if there are profuse, frequent stools, gushing out suddenly, gtt. 5 of tincture of podophyllum in 5 4 of water, giving one teaspoonful every three hours, is the best remedy.

Typhlitis and Peri-typhlitis.—The symptoms of the above inflammatory affections are so very nearly alike, that a diagnosis between them is almost impossible. Typhlitis, or inflammation of the mucous membrane of the cæcum, either in consequence of hardened fecal accumulations, cold or hard substances, as cherry or plumb-stones, may spread over the ascending colon, and to the vermiform appendix, and invading the muscular coat of the bowel, cause ulceration and perforation, and end in peritonitis, and finally death. *Peri-typhlitis* is an inflammation of the loose areolar tissue around the cæcum, caused by typhlitis, or beginning separately. It is apt if not checked, to end in abscesses in the right iliac fossa. These abscesses may break through the parietes of the abdomen, near Poupart's ligament, or they may discharge themselves into neighboring viscera, and should they find no outlet, end in peritonitis and death. Inflammation of the appendix vermiformis may originate from hardened feces or from foreign bodies lodging there. The latter be the case, it may cause the obliteration of the process, or if its opening is closed, a slimy, serous fluid may block up its walls, and form what is called dropsy of the appendix. It may also terminate if not opened in time, in abscesses, and finally, peritonitis and death.

SYMPTOMS.—External swelling in the right or ilianguinal region of the abdomen is one of the first noted symptoms in these forms of intestinal inflammation. The swelling is immovable, smooth, and of various degrees of consistency. The pain usually commences suddenly, and is sharp, lancinating, and increased by

any motion of the body. The swelling is sensitive to the touch, and generally confined to the right iliac fossa, or else may extend to a larger surface, as the inflammation does. Constipation most generally accompanies this affection of the bowels, but may alternate with a slimy kind of diarrhœa. Vomiting is liable to occur at any stage of the typhlitis, and the upper bowels and stomach are filled with gas, giving rise to quite a troublesome hic-cough. Pain is frequently felt in the testicles, accompanied by contraction of the cords, difficulty in urinating, and numbness of the right leg, from pressure upon its nerve. This pressure may in turn produce œdema of the right leg, in consequence of pressure upon the crural and iliac veins. There may be considerable fever at this stage of the disease, and the whole system may evince signs of sympathetic participation in the morbid condition of the intestines. Hectic fever may finally set in, and the patient become exhausted and succumb.

DIFFERENTIAL DIAGNOSIS.—This disease is liable to be confounded with abscesses of the psoas muscle, were it not that in this affection of the psoas muscle the swelling lies deeper, nearer Poupart's ligament, and more towards the middle line of the abdomen. The right leg is kept in a bent position, motion is impossible, and the action of the bowels is not disturbed. Abscesses of the psoas muscle are associated with caries of the vertebræ or the bones of the pelvis, and when pus is discharged through the abdominal walls it has no odor of fecal matter. It may be distinguished from intussusception or invagination of the intestines by the absence of diarrhœa in psoas abscess; whereas, in intussusception, diarrhœa precedes that disease, but after the invagination has taken place there will only be bloody and slimy discharges. In intussusception there is generally stercoraceous vomiting, hiccough, etc.

TREATMENT.—If there is great pain in the ilio-cæcal region, nausea, vomiting and high fever, small doses of belladonna, alternated with aconite, should commence the treatment. If, in the prognosis of the disease, a hard painful swelling should appear in the right side of the abdomen, which compels the patient to lie on his back, with his knees drawn up, I give small doses, say, gtt. $\frac{1}{3}$ to 1, of *rhus toxicodendron* every two hours. After the abscess forms silicea is required in doses of gr. 1 to 2 of the 1st dec. trituration three times a day.

Proctitis.—This form of disease of the rectum occurs in the acute and chronic form. In its pathological peculiarities, it resembles other catarrhal inflammations of mucous membrane, exhibiting swelling, injection of vessels, and thickening of tissue, which may result in large excrescences. Proctitis may be produced by abuse of purgative medicines, strongly-medicated injections, and by worms and hard fecal matter lodging in the folds of this part

of the large intestinal tract. It may be associated with syphilitic, cancerous, or tubercular ulceration. It may arise from disorders, causing an obstruction in the abdominal veins, as diseases of the liver, vena porta, heart, lungs, or even from hæmorrhoids when improperly treated.

SYMPTOMS.—The affection is characterized by pain of a tearing, throbbing, stinging character, which grows worse at stool; and by tenesmus, tormina, and, in severe cases, retention of urine, painful urination, dripping of the urine, drawing up of the spermatic cords, and in females white swelling. The upper bowels are generally constipated, and if any fæcal discharges pass, are covered with mucous, tinged with blood. The tenesmus and tormina often cause prolapsus ani. The chronic form is not attended with fever, but frequent slimy discharges.

TREATMENT.—In acute proctitis, if the fever is high, I use tincture of aconite gtt. 30, aqua \mathfrak{z} 4; dose, a teaspoonful every hour, or every two hours, according to the urgency of the symptoms. I alternate with gelseminum, \mathfrak{z} $\frac{1}{2}$, aqua \mathfrak{z} $\frac{1}{2}$ in doses of a teaspoonful every three or four hours. When I have moderated the febrile or inflammatory symptoms with the above remedies, I give every hour a teaspoonful of ipecac. (tincture of the fresh root), \mathfrak{z} 1; aqua, \mathfrak{z} 4; and alternate with tincture of podophyllum, \mathfrak{z} 1, aqua, \mathfrak{z} 4, in doses of a teaspoonful every three hours. These remedies, in moderate doses, have direct affinity for the mucous membrane, and lessen congestion by controlling the capillary circulation of that tissue; but, in large doses, produce the toxical effect, and do more harm than good. In many cases that I have treated, I have found it best to keep the upper bowels open with the very mildest cathartics, such as rochelle salts, in doses of \mathfrak{z} 1 to 2, cream of tartar, or Epsom salts, in small doses. The disease is often confounded with dysentery, the difference being, that the latter occurs epidemically, while proctitis appears sporadically at any season of the year, and generally receives the title of "*sporadic dysentery*." It is a much milder rectal disease than epidemic dysentery, and is seldom fatal.

Dysentery.—This is an inflammation of the mucous membrane of the large intestines, and usually commences at the valve of the cæcum, and spreads rapidly over the colon and rectum. Its greatest intensity is in the bends of the affected bowels. The mucous membrane is reddened and swollen, and the epithelium peels off and is sometimes raised into blebs by exudation. In the advanced stages of the disease, the mucous tissue becomes covered, in patches, with a yellowish gray or red substance, which finally assumes a brownish or greenish color. If it is scraped off with the scalpel, the mucous membrane is seen beneath, reddened and softened; and there are serous infiltrations in the cellular structure, giving

the surface an uneven appearance. The solitary follicles are also found ulcerated and swollen. In extreme cases, the mucous coat has been found much decayed or changed into a dark, soft mass, which is sometimes finally thrown off and discharged. If the patient lives, ulcers will appear in the colon, which are liable, finally, to perforate the bowels. Besides these changes in the intestines, there is always more or less peritonitis, enlargement of the mesenteric glands, and enlarged and inflamed liver. Dysentery generally prevails epidemically, and is doubtless produced by a peculiar miasmatic poison in the atmosphere. It often attacks camps, hospitals, and crowded cities. It is most prevalent in Summer and Autumn, especially when the days are very hot and nights very cool, and spares neither age nor sex. It is believed to be contagious to some extent, particularly where care is not taken in houses, to keep up free ventilation.

SYMPTOMS.—This disease often commences with free, loose stools, of a rather diarrhœæal character, but which soon change into the characteristic dysenteric stools. At the outset, there is apt to be more or less jelly-like slime in the stools, which is often dotted or streaked with blood. This jelly-like material increases, and is discharged with much tormina and tenesmus. As these mucous and bloody discharges increase in quantity and frequency, the fœcal discharges diminish, and finally altogether cease. The mucous discharges frequently assume a dirty, reddish, or gray color, like the scrapings of flesh, and are seen swimming in a thin bloody serous fluid. The quantity of blood varies from a mere tinge to pure fluid. Where whole shreds or pieces of tough mucus slough off from the bowels, and where the discharges assume a brownish chocolate-like color, and have a cadaverous odor, it indicates an ichorous ulceration of the mucous membrane of the bowels. When fœcal matter reappears in the stools, the inflammation gradually declines, although there may still be tenesmus and tormina, and more or less mucus in the discharges for several days. If the proper treatment is carried out, the patient will soon regain his health. In severe cases, the fever may run very high in young and vigorous subjects, and the patient may at first suffer with nausea and vomiting.

PROGNOSIS.—Copious hæmorrhages and ichorous, chocolate-colored and cadaverous-smelling stools, are indications of a fatal termination. Extreme prostration; frequency and smallness of pulse; cold skin; cold, clammy perspiration; livid face; collapsed abdomen; paralysis of the sphincter ani; involuntary discharges; peritonitis; perforation of the bowels; shaking chills; delirium and convulsions; all indicate approaching dissolution, as does also paralysis.

TREATMENT.—In the most active form, where there is high fever,

a dry skin, and frequent, painful, and bloody stools, I have found gtt. 1 to 2, of tincture of aconite, with gtt. 15 to 30, of gelseminum, useful, given every hour, until the effects of the aconite are felt upon the frequency of the pulse, and the effects of the gelseminum are seen upon the muscles of the eyes. After this give it at longer intervals. If, however, the disease has progressed far, and the symptoms are grave, I use antiseptic treatment. If there are violent colic-like pains before and after stool, great tenesmus, and discharges of offensive or pure blood, containing very little mucus, I give gtt. 3 to 5, of baptisia every two hours, until the stool cease to have a disagreeable smell. If large quantities of blood are passed, then hamamelis, in doses of gtt. 1 to 5, should be given every hour, until the hæmorrhage stops. If nausea and vomiting set in, with bloody stools and much tenesmus, small doses of ipecac., alternated with the tincture of podophyllum, in doses of gtt. 1 to 2, each, will frequently put a check to the disease. If the upper bowels are bound up, then a mild aperient, as cream of tartar, rochelle salts, or a small dose of Epsom salts, should be given every day to keep up the action of the upper bowels. This always aids in the cure. The sulphate of sodium in small doses of gr. 2, every two hours, is valuable in this disease. In many cases where there are frequent, bloody, and watery stools, violent tenesmus, and much flatus escaping with the stools, gtt. 1, of the tincture of aloes will be apt to do great good. This medicine has direct affinity for the colon and rectum, and its effects are produced, like all other remedies, in doses too small to give a toxical effect. The toxical effect is to gripe and purge, while its medical use is to soothe and quiet the excited mucous membrane, whence its good effects in dysentery. Very small doses of colocynth have the same effect where there are griping and twisting pains in the bowels. I have had under my care, for the last thirty-eight years, a great many cases of this disease, and have tried all forms of treatment, from drugging with calomel, opium, and castor-oil, to the milder treatment with cream of tartar and opium, but they have all signally failed. This season I have generally aborted the disease (in all cases which I saw in time) with aconite and gelseminum. If I do not see the patient in time to do this, I resort to small doses of baptisia, alternated with the tincture of the green root of podophyllum. I seldom give opium now, as the gelseminum relieves the tenesmus and the termina.

Cholera.—This disease produces serous, tough, exudations upon the lining of the intestines. The small intestines are found flabby; their serous lining, in consequence of hyperæmia, appears pinkish; their mucous tissue is injected; and the solitary glands, and generally Peyer's, too, are enlarged, and filled with serum or a solid exudation.

The characteristic rice-water fluid fills the small intestines, or their walls are lined with a paste-like substance. The coats of these intestines are swollen and œdematous. The villi have lost their epithelium, and consequently the surface of the mucous tissue appears raw and skinned. The colon and rectum do not generally present any unusual appearances. The characteristic *rice-water* discharges, take place in this way; the villi being denuded of their covering, give rise to a copious transudation of serum into the small intestine, which discharge may be passed up or down, By the loss of the epithelium, these villi are unable to absorb the fluid the patient takes as drink, and so he or she rapidly loses fluids in all the tissues of the body. This accounts for the thickness and dark color of the blood, and also for the cessation of secretions, as sweat, tears, saliva, urine and bile. The blood thus constantly loses its serum, and in consequence thereof the capillaries become impaired. As this takes place in the muscular structure of the heart it causes a paresis of that organ, which is followed by feebleness of the heart's sounds and impulses, cyanosis, and blueness of the skin and tongue, so characteristic of this disease. The respiration is also so impaired, that the blood is imperfectly oxygenated and causes the great prostration so noticeable in this dangerous disease. Spasms or *tonic cramps*, are pains doubtless originating from central irritation, which is the result of the loss of fluids of the blood, which contract the muscles in round hard knobs, and render cholera so painful. This is the picture of *Asiatic cholera pathologically*.

CAUSES.—This affection is caused by some very deadly emanation, the nature of which has never been defined. It first appeared in Asia, and hence is yet called ASIATIC CHOLERA. It is generally very fatal if not checked, or if it does not prove so, in a short time the disease changes into some kind of typhoid inflammatory condition, such as pneumonitis, pleuritis, bronchitis, parotitis, splenitis, or diphtheritic exudation in the intestines, pharynx, or bladder, which is apt at last to carry off the patient.

TREATMENT.—In the premonitory stage, where there is nausea, diarrhœa, sweat or pain in the hypogastrium, congestion of the mucous membranes, cold limbs, blue nails, and tendency to collapse, gtt. 1 of aconite alternated, with gtt. 5 of the *saturated tincture* of camphor should be given every hour, or gtt. $\frac{1}{2}$ of aconite and gtt. 5 of camphor every half hour where the symptoms are grave. If this fail to produce a favorable change in three or four hours, and there is great prostration, intense thirst, incessant vomiting and purging, a cold clammy sweat covering the skin, burning pain in the bowels, frequent scanty discharges, containing dark or yellowish water, small, feeble, tremulous pulse, and tonic spasms of the extremities, the best remedy is from gtt. 3 to 5 of tincture of arsenic, every two hours, or gtt. 1 to 2 every half hour, in alter-

nation with the tincture of camphor. When spasms seize upon the whole muscular system, including even the whole diaphragm, and muscles of the heart, and there is very severe colic, with constant nausea and vomiting, collapse, blueness of the skin, delirium, and deathly prostration, I give small doses of sulphate of copper in alternation with veratrum album, say gr. $\frac{1}{20}$ of copper, and gtt. $\frac{1}{2}$ or $\frac{1}{4}$ of tincture of veratrum. The veratrum album is a splendid remedy in this stage.

Some German writers, as Rademacher, use the acetate of copper, while other writers recommend the ammoniated sulphate of copper, especially where there is excessive thirst, vomiting of large quantities of fluid, and violent cramps in the limbs. Some have especially where there is excessive thirst, vomiting of large found *euphorbia corollata* a valuable adjuvant in this disease, especially where there are large quantities of mucus and water vomited up, or where there is faintness or exhaustion. When the disease assumes a typhoid variety, and there is coma, with quick, full pulse, then belladonna, in doses of gtt. 2 to 3 every two hours, will be of material service. If the ejections are yellow or corrosive, with burning in the stomach, bowels and rectum, small doses of tincture of iris versicolor will give relief. It has been ascertained that the air in those localities where cholera prevails, is destitute of the usual amount of *ozone*, and from that fact, I would recommend that the patient's drink be sufficiently impregnated with ozonized water, and his room kept filled with *ozone*. This may be done by evaporating a solution of *permanganate* of potassium slowly in the apartment. Iodized starch paper kept lightly heated in the room will also generate *ozone*, as will also a stick of phosphorus in water, when occasionally agitated briskly.

Cholera Morbus.—This disease is accompanied by nausea, vomiting, watery purging, spasmodic pains in the abdomen, frequent cramps in the lower limbs. rapid loss of strength, and coldness of the surface. It generally comes on suddenly, and often in the night. There is usually thirst and constant vomiting, and purging of a matter at first thin, fœtid, and bilious, but soon changing in color, and finally becoming like rice-water, without fœtor. The disease prevails mostly during summer heat, although it may occur at other times, and is caused generally by improper food.

CAUSES.—It seems to follow exposure, checked perspiration, drinking ice-water, and eating ice-cream, and watery, indigestible fruits, such as cucumbers, raw onions, cabbage, green apples and plums, &c. It resembles Asiatic cholera, but is less severe, and is not, like it, caused by a specific poison, and is hence, neither so violent, nor so epidemic as cholera.

TREATMENT.—For the violent vomiting, there is nothing so prompt in its action as ipecac. in doses of gtt. $\frac{1}{2}$ to 1 every ten

minutes, until the vomiting ceases. If the ejections of the bowels are sour, profuse, frequent and watery, the tincture of iris versicolor should be given after every passage until this symptom is checked. If the ipecac. fail to check the vomiting, euphorbia cor. may be tried, and if it fail too, try small doses of the 1st dec. dilution of creosote, or of gtt. 1 to 2 in doses every half hour. Where there is great prostration, and coldness of the skin, gtt. 5 to 6 of camphor given every hour until the symptoms cease, act well. If there is much fever, with green and watery stools, I prescribe gtt. 1 of aconite in alternation with the tincture of chamomilla (*German chamomile*) every one or two hours, according to the severity of the symptoms. Should painful cramps of the stomach, bowels, and extremities set in, let gtt. 10 to 15 of dioscorea (*tinct.*) be given every 10 minutes, until the cramp ceases. In all instances where the disease manifests great severity, and prostration takes place very soon, I would recommend camphor, as in cholera. It is a valuable remedy.

Cholera Infantum, or *Summer Complaint*, as it is called, is very similar to *Cholera Morbus*. It is frequently characterized by greenish stools, with frequent vomiting. It is often associated with teething. I have found ipecac. or euphorbia the best remedies for vomiting, and compound syrup of rheum for the purging. If the dejections from the bowels are green, then small doses of tincture of chamomilla answer well. If the stools are offensive, small doses of borax are required.

Chronic Constipation.—Constipation may originate from various causes, such as sedentary habits; dissipation; improper quantity and quality of food; exclusive use of fine flour; mental anxiety; inaction of the liver; poisonous effects of lead in paints, or the use of hair dyes that contain acetate of lead; inertia of the coats of the bowels; mechanical obstruction to the contents of the bowels, and inflammatory affections of the bowels, brain, spinal cord or their membranes. Many people, however, superinduce this disease by impairing the tone and susceptibility of the mucous coat of the bowels, by taking patent pills or other harsh purgatives every time they are feeling unwell. Constipation being generally the result of certain pathological conditions of the general system and of certain organs, is not to be cured by purgatives.

TREATMENT.—If it be associated with indigestion, gtt. 5, of nuxvomica, at meal time, or just before, will often relieve it. Cascara sagrada is also a reliable remedy. Where it results from inaction of the liver, and the stools are hard, dry, and light colored, gtt. 1 to 2, of bryonia, three times a day, will generally relieve it. If it be associated with hæmorrhoids, and the dejections are painful—like sharp sticks in the rectum, I give gtt. 5 or 6, of æsculus hippo. which should be used twice a day, alternated with whatever remedy the other symptoms may indicate. Constipation

from the poison of lead or from inertia of the rectum, where the stools are hard, knotty and scanty, should be treated with small doses of alum. Where constipation is attended with prolapsus ani, and weakness and soreness of the back, small doses of podophyllin at night, should be alternated with a dose or two of *rhamnus purshiana* in the day. When it occurs in aged persons, who lead a sedentary life, and where the stools are hard, gtt. $\frac{1}{3}$ to $\frac{1}{4}$ of aloes at night, may overcome the trouble. If the constipation exists, with pressing pain in the rectum, and the discharge contains only mucus and much wind, small doses, say, gtt. 10 to 30, of *asa-fœdita*, three times a day, may overcome the disease. When associated with pain in the region of the liver, with the stools in balls, and of a pale color, caused by portal congestions, gtt. 20 to 30, of *chelidonium*, must be alternated with gtt. 20 of tincture of *collinsonia*, and will relieve the constipation and regulate the biliary action. If the affection is from indigestion, which is often the case, then *hydrastis* and *euonymus* (in tincture) are the best remedies in doses of gtt. 10 to 15, of each. They may be alternated and given a few hours before each meal if it is desirable. If great acidity of the stomach be the cause, then gtt. 2 to 5, of *robina*, is the remedy wanted.

Intestinal Hæmorrhage.—This condition is often the result of obstruction of the portal circulation, as in cases of cirrhosis of the liver, diseases of the lungs and heart, compression of the vessels by large abdominal tumors, and erosions or degeneration of the coats of the blood vessels, from typhus fever, yellow fever and scurvy. It may also be the result of cutting substances passing along the bowels, and is sometimes caused by suppression of hæmorrhoids or of menstruation. Severe hæmorrhage of the bowels is associated with paleness, coldness of the limbs, weak pulse, collapsed features, faintness, chilliness, and discharges of blood through the rectum. If the discharges be from the upper bowels, they are dark, and generally mixed with fæcal matter; but if from the lower, they are red and fluid. Its exact seat, however cannot be determined, as it may come from the stomach as well as any portion of the intestines. If the blood is turned black, and the stools are the color of tar, the passages thrown into water turn red if they contain blood, but if bile, and not blood, the color will be green or greenish yellow.

TREATMENT.—Vegetable charcoal is a reliable remedy, as is also *hamamelis* in passive hæmorrhage. I have always had best success, however, with small doses of Monsel's salt of iron. *Ipecac.* does well in doses of gtt. 4 or 5, of the tincture every hour.

Hæmorrhoids.—This disease consists of an enlargement of the veins of the mucous membrane outside and inside of the sphincter muscles of the anus. When the tumors appear outside of the

sphincter ani, they are called external piles, and when they occur inside, they are called internal piles. They are doubtless produced by various causes in persons who have a constitutional tendency to a varicose condition of the veins, and especially of the rectum. When one or more of these varicose veins are ruptured, they are called *bleeding piles*, and when they do not rupture and bleed, they are called *blind piles*. When a catarrhal condition of the mucous membrane of the rectum exists, and a slimy mucous secretion passes from the anus, they are called white or slimy piles. The size of the hæmorrhoidal tumors varies from that of a pea to that of a cherry or even walnut, and sometimes they cover the whole anus. Especially is this the case in pregnant females. When the piles are pressed out through the sphincter muscle, they become strangulated by its contraction, and assume a purple or bluish color. This turgescence of the hæmorrhoidal veins is not always continuous, but subject to frequent changes. There are intervals, shorter or longer, when the patient is almost free from pain, attendant upon the disease. Repeated attacks of the turgescence result finally in a thickening of the coats of these varicose veins, and the tumors become paler and harder. The tumors are gradually elongated by each evacuation of the bowels, and are finally developed into soft bags outside of the sphincter ani, which very often become inflamed by slight pressure upon them, or from attacks of dysentery.

CAUSES.—The predisposing cause of hæmorrhoids seems to be the position of the rectal veins, they being the lowest branches of the abdominal vessels, and in the want of valves to sustain the returning column of blood in its course towards the vena porta. It is plain, that any retardation or stagnation in this backward moving column—the weight of which presses downwards, upon the lowest branches of the vessels, overfilling and enlarging them.—is calculated to produce varicosity in these vessels. This obstruction of the blood in the veins, may arise from tumors within the cavity of the abdomen, pressing upon the veins of the rectum, or from the impregnated uterus pressing upon the same vessels. Diseases of the liver, obstructing the portal circulation, may produce the same effect. Diseases of the heart, which more than fill the veins with blood, may lead to the same result. The use of wine and alcoholic drinks, over-stimulates the capillary circulation, and naturally leads to hæmorrhoids.

SYMPTOMS.—These are plain and need not be mistaken. Besides the appearance of the tumors, the patient will often complain of disturbed digestion, costiveness, dull pain in the small of the back, and more or less headache. There may also be complaint of much pain at stool, and of frequent hæmorrhages, and if they are suddenly checked by cold or otherwise, constitutional troubles

may follow, such as congestion of the head, lungs, stomach, liver, or kidneys; or there may be bleeding at the nose, lungs, and urinary organs. Sometimes, in old people, there is a varicose condition of the veins of the neck and bladder, and in females, of the uterus and vagina, which causes hæmorrhages of these organs. Sometimes the hæmorrhoidal tumors inflame, separate, and form fissures of the anus, resulting finally in contractions of the sphincter ani, or prolapsus ani. All these ill consequences may arise, and oft times various others. I have seen piles so often precede phthisis pulmonalis, that I am of the belief, that in constitutions predisposed to it, they may develope that disease.

TREATMENT.—If constipation exists with piles, or occur in those addicted to intoxicating drinks, *nux vomica*, once or twice a day, in doses of gtt. 3 or 4, alternated with small doses of sulphur, to regulate the bowels, will often produce improvement in a few days. The application of an ointment of Monsel's salt, say \mathfrak{z} 1 to \mathfrak{z} 1 or 2, of lard. and the internal use of *æsculus hippo.*, or *æsculus glabra*, in doses of gtt. 2 to 5, of the tincture, three times a day, will often cure the disease. In cases attended with profuse hæmorrhages, *aconite*, in doses of gtt. 1, three times a day, alternated with gtt. 1 to 2, of the tincture of *hamamelis*, will generally check the hæmorrhages and aid in the final cure of the hæmorrhoids. I have successfully treated a number of cases, some of them where the tumors were large, with the tinctures of *collinsonia* and *æsculus hippocastaneum*, in doses of gtt. 10, of the *collinsonia* and gtt. 5, of *æsculus hippo.*, three times a day. At the same time, I applied a strong solution of Monsel's salt to the tumors. In my own case, I have effected a cure five times in my life, and each time, I had the disease very severely from riding. Injecting the tumors with the tincture of ergot and carbolic acid, in equal parts, with a syringe; made for the purpose, is a good plan for internal piles. In persons of sedentary habits, with blind piles, and plethoric persons, with constipation or indigestion, gtt. 3 to 5, of *nux vomica*, alternated with gr. 2 to 5, of sublimed sulphur, will generally give relief, if it does not cure them. If the liver is inactive, and the bowels rather bound, of *podophyllin*, gr. $\frac{1}{2}$, three times a day may be given, or gr. $\frac{1}{8}$, of *podophyllin*, and $\frac{1}{8}$ gr. of aloes, three times daily, until the action becomes normal. Then give *æsculus hippo.*, in doses of gtt. 5, three times a day, until the cure is completed. When hæmorrhoids are attended with tenesmus and diarrhœa, gtt. 1 to 2, of tincture of *capsicum*, every two or three hours, will generally bring prompt relief. When the tumors are very large, hard, and extremely painful, small doses, say gtt. 1 to 3, of muriatic acid, three times a day, are very valuable remedies. Should the tumors be inflamed, raw, and very painful, use the unguentum gallæ, alternated with the oint. of the leaves of stram-

onium or hyoscyamus. The diet should be strictly regulated, and the bowels kept loose. The patient must avoid stimulants in either food or drink, indigestible food, full meals, and too much meat. Injection of cold water occasionally before stools, is a good prophylactic. Surgical operations are seldom necessary.

Peritonitis.—The pathological peculiarities of peritonitis are like those of *pleuritis*, *meningitis*, or *pericarditis*—injection of the capillaries followed by exudation. This exudation is either of a serous character, and then profuse and distending the abdomen, or the exudation is of a fibrous character, *coagulable lymph* predominating. This is apt to cause adhesions, and thus fasten one portion of the intestines to another, so giving rise to strangulations of portions of the intestines. Sometimes the exudation is more or less mixed with blood-globules, and then it is called hæmorrhagic exudation, and is mostly found in scurvy, typhus and other hæmorrhagic diseases. Again the exudation may be converted into pus or ichor, and is then called purulent or ichorous exudation. This last, however, rarely takes place, except in cases where the blood is greatly depraved, as in puerperal fever, pyæmia, or where urine passes into the abdomen. It is apparent then, that the simple cessation of inflammatory symptoms is not an evidence that the disease is cured, but of the exudation being still present and giving rise to much trouble. It may even, at last, terminate fatally. Peritonitis does not always involve the whole peritoneum, that is, it is not always general or diffused peritonitis, but is frequently partial, attacking only certain portions of the membrane, as for instance, the parts which cover the liver, spleen, kidneys, uterus, or portions of the bowels, they being more or less complicated with inflammations of the respective organs or parts.

CAUSES.—The causes are various. In many cases the disease is caused by injuries, such as blows, falls, and penetrating wounds, either accidental, or from surgical operations. In some instances it may be the result of cold. It may also follow inflammation of the liver, spleen, womb, bladder, cæcum, and stomach. Ulceration and perforation of the bowels, may follow child-bed fever or suppressed menstruation. A cold suddenly taken, may also be responsible for its appearance.

SYMPTOMS.—The disease exhibits a variety of manifestations, owing to the diverse causes of the peculiar affection. Pain is a common symptom, is lancinating and sharp, and is increased by motion, touch, or the slightest pressure. The patient breathes only with his thorax, avoiding the action of the diaphragm, and lies with the limbs flexed to prevent the tension of the abdominal muscles, which is painful. Nausea and vomiting are apt to supervene in a few hours, and the vomiting frequently becomes stercoraceous if there is obstruction in the bowels. Singultus often sets

in towards the second or third day, especially if the lining of the diaphragm is involved in the inflammatory process. Constipation is frequently troublesome, and where there is ulceration, or in cases of puerperal peritonitis, there is often diarrhœa. The bowels are generally distended with gaseous accumulations, from the passive state of their coats. If the serous lining of the bladder is involved, there will be a constant desire to urinate, with tenesmus of the bladder and retention of urine. There is always fever and sometimes it is intense, according to the surface involved. When caused by taking cold, it is not very dangerous, when properly treated, but when the attacks follow wounds, it is sometimes fatal. When the pain gradually abates, it may be regarded as a favorable sign, especially if the pulse rallies. If the pain ceases, and the pulse grows weaker and weaker, it is a bad sign. If the features collapse, the pain very suddenly ceases and the pulse becomes flickering, then we may look for a fatal termination. When this affection becomes chronic, it often terminates in marasmus.

TREATMENT.—Aconite is the remedy for peritonitis in the first stage of the inflammation, in doses of gtt. 1, every two hours. In the second stage, when the fever abates, and effusion threatens, bryonia, in doses of gtt. 1 or 2, every hour, acts admirably. Bryonia should be given from the commencement of the peritonitis, when it follows mechanical injuries. Should the inflammation attack abdominal organs, and there be colic-like pains in the bowels, I give small doses of colocynth, say gtt. 1 to 2, of the tincture, every hour, alternated with bryonia alba. For tubercular peritonitis, gtt. 1 to 2, doses, of tincture of arsenic, every three hours, alternated with the carbonate of lime, or the carbo. veg., in doses of gr. 2 to 3, every two or three hours, is very effective. If there be headache or any disturbance of the brain, gtt. 2 to 3, of tincture of belladonna should be given every three hours, until the symptoms are relieved. If tympanitis is very great, tincture of oil of ergeron should be given in doses of gtt. 3 to 5, every two hours, until it gives relief. If the pain should become sharp and stinging, and the limbs look puffy or œdematous, I prescribe gtt. 2 to 3, of tincture of apis mel., every two hours, until the symptoms disappear. Hot fomentations should be applied at first.

Enteralgia.—By colic is to be understood neuralgic pains in the bowels, coming on in paroxysms. They may occur without any pathological lesion, or may be the result of various morbid processes, or of changes in the bowels. It is often caused by improper food, or an undue quantity of healthy food. Again, it may be caused by gas accumulating in the bowels, called *wind colic*; or by impacted, hard fœces, called *stercoraceous*. Occasionally it exists in children from the irritation of worms, called (*colica verminosa*;) from certain metals, as lead, when it is called *colica sat-*

urnina; and from copper when it is called *colica æruginosa*. It may be caused either primarily or secondarily, by disturbed nervous action. In the secondary form—consequent upon diseases of other organs, it is caused by reflected nervous irritation, as when the liver is diseased; or in uterine diseases, or diseases of the kidneys. Wind colic is also of this order, for here we have reflected nervous irritation thrown back upon the nervous center, resulting in spasm. Structural changes in the intestines, such as dysentery, hernia, intussusception, strangulation, and typhlitis, cause colic. We meet, too, with rheumatic colic, produced by cold feet, or by the patient suddenly taking severe cold.

SYMPTOMS.—The pain is of a crampy, griping, or twisting character, and comes on in paroxysms. Its seat generally is in the umbilicus or in the side of the abdomen, and sometimes it shifts from one place to another. Pressure gives relief in some cases, and in others increases the pain. The application of heat gives relief in most cases, but generally increases the pain. Sometimes there are irregular contractions of the bowels, which move the fluid and gaseous contents, and cause a hard knot in the colon, which can be felt by examination with the hands. In lead colic, there is generally a large collection of gas in the bowels. Frequently constipation, nausea, vomiting and belching, are attendant symptoms, and the pulse is often small, and the skin and extremities cold with perspiration. The patient is generally very restless, constantly changing his position. These spells, if unrelieved, may last for some hours, or for a day or so, or even terminate fatally. In wind colic, the pain ceases as soon as the gas is discharged. Colic from indigestion or overloaded stomach, ceases as soon as vomiting takes place, or may be relieved by diarrhœa.

TREATMENT.—In flatulent colic, a few drops of chloric ether, in mint water, will usually relieve the paroxysm. Gtt. 20 to 30, of the tincture of *dioscorea villosa*, in a teaspoonful of essence of mint, with water, generally gives prompt relief. Then gtt. 2 to 3 of *nux vomica*, three times a day, will relieve the indigestion upon which, in almost every case, the colic depends. If the pains are twisting, cutting or griping in character, small doses of gtt. 1 to 2, of tincture of *colocynth*, has generally acted well with me. In flatulent colic, *iris versicolor*, in doses of gtt. 1 to 2, of the tincture, every one or two hours, often cures when all other remedies have utterly failed. In some cases of this disease in children, caused by worms, *santonine*, in gr. $\frac{1}{8}$ to $\frac{1}{4}$ doses, will give good results. In that form where colic is attended with vomiting of bile, *dioscorea*, in doses of gr. 1, every hour, will give relief. Where it occurs in children, causing them to scream out suddenly, *chamomilla*, in doses of gtt. 1, every one or two hours, will be useful. In severe cases of spasmodic, flatulent colic, gtt. 1 to 2

of *nux vomica*, (saturated tincture), has proved one of the most positive remedies we have, and if continued will ward off attacks.

Ascites.—This disease consists of a collection of fluid within the peritoneal sac, which is of a yellow or yellowish green color, or if there be blood mixed with it, is of a reddish color. This, when carefully examined, contains a great deal of albumen, saline matter, and some flakes of coagulated lymph, floating in it. The quantity of fluid contained within the peritoneal sac differs in each individual case, the sac sometimes containing thirty or forty pounds. The peritoneum becomes opaque, loses its luster, and thickens considerably. The liver and spleen are pale, and in some cases smaller than natural. The kidneys too, are anæmic; and the pressure of the fluid drives the diaphragm up into the thorax. This is never a primary disease, but always follows some other, as disease of the lungs, heart, larynx, blood-vessels, liver, spleen, kidneys, cancer, cachexia, or some other form of fever, as measles, scarlet fever, typhoid or typhus fever, or even long continued and neglected chills and fever. Impediments to the circulation may cause it, especially obstructions of the vena porta; and it very often results from cirrhosis of the liver, tumors of that organ, cancer, and tuberculosis.

SYMPTOMS.—One of the first noted symptoms is enlargement of the abdomen. When the patient is erect, the hypogastric region is most swollen; but when in the reclining position, the most dependant portion of the abdomen protrudes. This is the distinguishing point between ascites and other swellings of the abdomen, such as pregnancy, and distention. Palpation shows a distinct fluctuation over the abdomen. The kidneys are also apt to be torpid, and the patient is troubled with dyspnœa and palpitation of the heart. Percussion reveals a dull sound while the patient is reclining.

TREATMENT.—In cases where the urine is dark colored, and scanty; and where there is great soreness of the abdomen, stinging, burning pains in the body, and dyspnœa when in a reclining position; when it follows scarlet fever, uterine tumors, and any inflammatory disease of the bowels, I advise the tincture of *apis mel.*, in doses of gtt. 1 to 2 three or four times a day. If the pulse is small and feeble, the tincture of *digitalis*, in doses of gtt. 10 every two or three hours, aids other remedies in reducing the accumulation of water in the cavity. *Apocynum cannabinum*, in infusion, is one of the most trustworthy drugs, and may be given in doses of gtt. 60 of a strong aqueous infusion every hour, until the kidneys respond, or until it begins to purge. Then prolong, or lessen the dose one-half. If the dropsy is from cirrhosis of the liver, small doses of tincture of *croton tiglium* may be of material service, which is made by adding 51 to 59 of alcohol. The dose

is gtt. 3 to 5. If it purges too much, lessen the dose. Should these remedies fail, I use the infusions of *polytrichum juniperum* and *chimaphila umbellata*, in doses of $\frac{5}{1}$ to 2 every hour, until the kidneys act well, when I prolong the intervals between the doses. Recently, I have used the tincture (in gin) of the **actinomeris helianthoides* in doses of one or two teaspoonfuls every one or two hours, until the kidneys act well. This medicine acts with great force upon the kidneys. If I fail to cause action of the kidneys, which is sometimes the case, I give the compound powder of jalop and cream of tartar, with about gr. $\frac{1}{2}$ of podophyllin to each dose, until I move the bowels freely, which generally will start the kidneys to action. The fluid will then be rapidly removed.

In the successful treatment of dropsy of any part, we must always correct the torpid state of the kidneys, and also that of the blood, and remove any diseased condition of the liver, spleen or stomach, for upon these organs most cases of dropsy depend. Some cases are caused by diseases of the heart, and some of these affections of the heart are incurable, consequently, the dropsy caused thereby is likewise fatal. I frequently at the commencement of the treatment, put my patient upon iron and tonics, alternated with diuretics, and if not then, I do so as soon as I get the kidneys in working order. The syrup of the carburet of iron is a reliable preparation of iron, and as a tonic and blood maker, *helonias dioica* in doses gtt. 30 three times a day, is very valuable. I have been obliged to administer the nitrate of potassium in doses of from gr. 5 to 10 three times a day, before I could remove the water from the blood. If it acts well and does not purge it should be continued, given in a large quantity of water, to prevent irritation of the stomach and bowels. The acetate of potassium also acts well on the kidneys of some individuals. The best of diuretics fail to cure some patients.

Intestinal Worms.—Intestinal worms often trouble young people and children, and occasionally are found in the older persons.

SYMPTOMS.—The symptoms vary in different cases; but the most sure and unmistakable sign of their presence is their occasional passing off with the alvine discharges. The other symptoms vary according to the kind of worms producing them. There are five species of worms described as inhabiting the human intestines, but there are only three of them that are commonly found. (1) *Oxyuris Vermicularis*, the *thread or scat-worm*, mostly called the *ascaris vermicularis* which is found in the lower bowels, generally in the rectum. This worm is from two to five lines in length, white, slender, pointed at one end, and very active. The head is

*See Author's New Remedies.

club-shaped, and the tail curved in males, and straight in females. The females are the most numerous. The symptoms of this worm are, irritation and tickling in the anus, and sometimes they produce a sticking sensation, as if a pin or other sharp-pointed substances were lodged in the part. They cause so much irritation in some cases as to give rise to catarrhal inflammation of the mucuous coat of the rectum, blennorrhœa and swelling, with tenesmus. They frequently produce headache. In females, they may leave the rectum and lodge in the vagina, causing intolerable itching and inflammation, and may so excite the parts as to give rise, in young girls, to the habit of masturbation.

TREATMENT.—When I was young, I saw in Prof. Eberle's practice, the following prescription used, viz. proto-sulphate of iron, gr. 2; aqua pura, ʒ 4; dissolve, and inject into the rectum. This has always proved successful. I was once giving an old lady the powered bark of the root of the apocynum cannabinum, in pills, in doses of gr. 4 or 5 as a cathartic for headache, and while relieving the headache, (which was doubtless caused by the ascaris) she passed a large number of these worms, and was given immediate relief from her headache. Injections of a strong infusion of the apple-tree bark have frequently removed them for me in children, and although they are not as certain to remove the worms as the iron, they are not as irritating.

(2) The *Ascaris Lumbricoides*, the round, long worm, is of a cylindrical form, rather pointed at extremities, from six to twelve inches in length, and about the thickness of a goose-quill, thus resembling a large earth-worm. Its body is transparent, and of yellowish color. The females are most numerous, and are the largest. This worm inhabits the small intestines, but sometimes migrates, and ascends into the stomach, finally into the œsophagus, and then is discharged through the mouth. They have been known to get into the larynx, wind themselves up, and thus cause suffocation. There is a case reported at the surgical museum at Washington, D. C., of this character.

SYMPTOMS.—These worms as a general thing give rise to griping pains in the umbilicus, secretion of slime, diarrhœa, vomiting, and irregular appetite, or they may cause reflex irritation, itching of the nose, anus and genitals, enlargement of the pupils, squinting, salivation, restlessness at night. Starting and grating of the teeth in sleep also result from it. The child may look well, or he may be cachectic, with blue rings around the eyes; enlarged abdomen may also result from large quantities of these worms. In children of a highly impressible nervous system, there may be irritation of the brain, convulsions or fits of an epileptic character, or they may only produce headache, swelling of the upper lip, &c.

TREATMENT.—I have had success by giving gtt. 30 of tincture of spigelia, and from gr. $\frac{1}{8}$ to $\frac{1}{4}$ of santonin, in sweetened water, ter die.

(3) *Tænia Solium*.—Common tape-worm. This species of tape-worm inhabits the small intestine. It consists of a head, upon the front part of which there are four sucking cups, and in the middle of each a nozzle or snout, which is encircled by a double row of hooks. Its neck is slender, flat, and about half an inch in length; but has no segmentation. Its body consists of a long row of segments, each of which has a rectangular shape, and contains both a male and a female organ, the orifices of which are joined together at the apex of the lateral papilla. These papillæ are so arranged that each following segment has the orifice on the opposite side, so that they run along alternately from side to side. The size of the segments increase gradually towards the caudal extremity, becoming broader and broader; for the parasite is nourished and grows from its head, the newly created segments pushing those already formed before them. The caudal extremity consequently is the oldest portion of the worm, and its segments alone contain ripe eggs. There may be eight hundred or a thousand segments, and the worm may measure ten to thirty feet in length. The oldest segments are said to fall off from time to time, and are discharged. If these discharged segments happen to fall into a suitable soil, into the body of a dog or pig, for instance, the eggs develop themselves into *cysticercus cellulosæ* of the pig, or into the tape-worm in the dog. And the *cysticercus cellulosæ* of the pig, by transplantation into the stomach of man, becomes again a tape-worm in him. Only one is generally found in one person, but as many as five have come away from an individual at one time. Eating of raw pork will cause them. The *Tænia Lata*, or the *Bothriocephalus Latus*, is another kind which, instead of four mouths, has only a pair of fissures on its head; and its sexual organs lie in the center of each segment. Its neck is not distinct and the segments of its body are broader than they are long. They are found in Poland and Russia, and also in the eastern part of Prussia, and in Switzerland.

SYMPTOMS.—The symptoms are obscure in some individuals. Others complain of a pain in the stomach, have some nausea and vomiting at times, great hunger, and sometimes fainting spells. There may also be bloating of the abdomen; itching of the nose; headache; dizziness; dark spots before the eyes, and noises in the ears. Some have cholera or epilepsy.

TREATMENT.—Among the remedies that have proved successful may be first mentioned the tea of the *pomegranate root bark*, made strong, and drunk freely in early morning, on an empty stomach. In the evening purge off quickly with jalop and senna. Kooso, the flowers of the *brayera anthelmintica*, in doses of 5 2 to 3, in a

tumbler of water, is a useful remedy, so that it always be taken well stirred up. This should be prepared in the evening, and in the morning the patient should take a cup of coffee, to prevent nausea. One-half of the solution should be taken, and the rest half an hour afterwards. If the patient is nauseated he should sip lemonade to allay this symptom. In one or two hours the worm will begin to be discharged, which may be encouraged by a brisk cathartic. The oil of *aspidium filix mas*,--male fern, in doses of gtt. 3 to 5, three times a day, followed by a brisk cathartic, is highly recommended by some writers. Kamala is used with good effect in some cases. *Cucurbita pepo*, in emulsion, is much used sometimes, but does not answer with me. Some recommend moderately large doses of turpentine, but I think that gtt. 10 or 15, repeated four times a day, with oil to purge, is more successful. Oxide of zinc, in doses of gr. 8, every two hours, has had success.

CHAPTER VII.

DISEASES OF THE LIVER.

Hyperæmia.—In very warm climates, hyperæmia or congestion of the liver, frequently exists, but is not as frequent in temperate climates as is generally supposed. Where it occurs there is enlargement of the organ, which is over filled with blood. Its surface is smooth, tense, firm, and of a glistening appearance, and if cut into, black blood oozes out, and the parenchyma appears quite dark. It is most commonly caused by obstruction to the circulation of the blood, either from disease of the heart or the lungs. Diseases of the mitral and tricuspid valves of the heart pneumonia, pleuritic effusions, and emphysema of the lungs, may also cause this disease. Intermittent, typhus, puerperal, and exanthematic fevers, may often result in this affection of the liver; as may also scurvy. Suppression of the menses, or of hæmorrhoidal discharges, may cause its appearance.

SYMPTOMS.—These are heaviness, tension, pressure in the right hypochondrium, frequent derangement of the stomach, with nausea, vomiting, headache and depression. Palpation and percussion reveal an enlargement of the liver, and there may, or may not be, jaundice. The bowels are often constipated.

TREATMENT.—If there is vomiting, a bitter taste in the mouth, white tongue, dryness of the mouth, thirst, and costiveness and soreness over the liver, from gtt. 2 to 5, of the tincture of bryonia, every three hours, should be given. Where there is fullness, stitching pain and swelling of the liver, yellow color of the skin, great irritability and costiveness, gtt. 5, of tincture of *nux vomica*, every four hours, will regulate the action of the liver and improve the digestion. For enlargement, I give tincture of *chionanthus* in doses of gtt. 30, every four hours. * This is a valuable remedy, and it is especially called for, if there is jaundice with the enlargement. Enonymin, in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$, may be given, in alternation with *chionanthus*. If there be constipation, I order *podophyllin*, in doses of gr. $\frac{1}{4}$, every four hours, until the bowels are regulated. Should jaundice exist, and be the result of catarrh of the biliary passage, the sulphate of manganese, in small doses, every three hours, will aid in the relief. *Hydrastis* is also a good remedy in jaundice from catarrh of the bile ducts. If the disease is of malarial origin, *iris versicolor* (tincture) in doses of gtt. 2, every three hours, is effective, as is also *centaurea benedicta*.

* See Author's New Remedies.

Hepatitis.—This is inflammation of the substance of the liver. It seldom, if ever invades the whole organ at once, but only parts here and there, which are soft and yellowish in their center. At their periphery, they show hyperæmia, with swelling and softening of the liver tissue. In advanced stages of the inflammation, small pus globules form in the center of the inflamed spot, increase in number, finally unite and form a small abscess, which may again unite with other abscesses, and these, in the course of time, may involve the greater part of the liver in the suppurative process and prove fatal. The right lobe is more subject to this form of abscess, than the left. If these abscesses reach the periphery of the liver, they break through and discharge their contents into the abdominal cavity. Where, from previous inflammation, the surface of the liver has formed adhesions with adjacent organs, they perforate these organs and discharge themselves either through the abdominal walls, or into the thoracic cavity, stomach, gall-bladder or intestines. This is primarily a very rare disease, and is mostly produced by external wounds, as a fall, a blow, or a contusion, etc. Secondarily, it may originate from irritation, produced by hardened concretions within the gall-ducts. It may also be caused by ulcerative processes within the stomach and the intestines, which perforate and spread upon the surface of the liver. In very hot climates, it may exist with dysentery. It may also originate from pyæmia, in consequence of wounds of the body.

SYMPTOMS.—Hepatitis, from a fall, blow, or other mechanical injury, is attended with pain in the right hypochondrium, which is sometimes very severe, especially where the lining portion of the peritoneum is inflamed. It also causes pain in the right shoulder, and on tension, sometimes in the right straight abdominal muscle. The liver also is generally swollen, and the skin more or less yellow with fever, etc. Secondary hepatitis, from ulceration of the stomach and intestines, commences with chills, fever, pain in the region of the liver, jaundice and swelling of the liver. These are the symptoms of this disease, when caused by pyæmia, and abscesses may form on the convex surface of the liver, causing it to bulge out. This is easily detected by palpation. If the abscess forms on the concave surface, it compresses the portal vein, and results in enlargement of the spleen and ascites. Small abscesses may terminate without marked symptoms. Perforation through the abdominal walls is the most favorable termination, as in this case, the pus is discharged outside. Should the perforation be through the pleura, into the plural sac, it causes pleuritis; if into the lungs, the pus is coughed up, and if into the pericardial sac, it causes pericarditis, which proves fatal. If the stomach is perforated, the pus is vomited up, and if the

intestines, it is discharged per rectum. In view of these facts, it is evident that this disease generally terminates fatally.

TREATMENT.—In the acute stage, gtt. 1, of belladonna, alternated with aconite, each every two hours, will be apt to control the fever, and then bryonia should be given in doses of gtt. 2, every two hours. If there is a cramp-like pain at the inner angle of the right scapula, a shooting pain in the liver, bitter taste in the mouth, nausea, palpitation of the heart, quick and irregular pulse, and constipation, euonymin, alternated with tincture of chelidonium, should be given four times a day in small doses. If the tongue present a yellow coat, and there be nausea and vomiting, brown urine, and black stools, leptandrin, in doses of gr. $\frac{1}{2}$ to 1, may be given every six hours. If the pain in the liver is throbbing or stitch-like, gtt. 5 of nux vomica, may be administered every six hours, to relieve this pain and the congestion of the organ upon which it depends. In cases where abscesses are found, recourse should be had at once to the aspiration of the abscess. The sulphide of calcium, in doses of gr. $\frac{1}{2}$ to 1 should be given as soon as suppuration is apparent, and continued until it ceases. This drug materially lessens suppuration and should not be forgotten. If a green slimy diarrhœa sets in, gtt. 2 or 3, of pulsatilla, every two hours, will have a good effect. If there is vomiting of black masses, a burning pain in the liver, violent thirst, passage of dark stools, and a very quick pulse, tincture of arsenic, in doses of gtt. 1, every hour, is the best remedy. In slow cases, complicated with pneumonia, gtt. 2, of lycopus, in tincture, every three hours, should be used, with such other remedies as are indicated in each individual case. When there is an inactive state of the liver, with inflammation, I have found nux vomica, alternated with bryonia, the very best remedies. They act well both upon the liver and upon the digestive functions. They should be administered in small doses of say, gtt. 2 to 3, three or four times a day. The diet must be very light.

Cirrhosis of the Liver.—This is a chronic inflammation of the areolar tissue of the liver, which is of a fibrous texture, and forms a capsule, over the whole organ, entering the liver, as Glisson's capsule, with the portal vein, and lining all its ramifications. Inflammation causes exudation of coagulable lymph, which forms a new areolar tissue, and also adhesions between the ramifications of minute vessels. This compresses the secreting cells of the liver, and forms larger and smaller granulations, which are compared to *hob-nails*. In the progress of the disease, the new formation compresses the biliary ducts and blood vessels, and causes the liver to shrink and become hard, pale, anæmic, tough, and when cut through, to be seen tinged with bile.

CAUSE.—The most frequent cause is over stimulation of the

liver. It also results from the use of alcoholic drinks or may follow fever, (especially remittent), or chills and fever.

SYMPTOMS.—In this disease, during the stage of exudation, the liver is enlarged, but in the stage of granulation, it is so much lessened in size, that the left lobe may disappear entirely. This affection is often connected with hypertrophy of the spleen, following obstruction of the circulation of the blood in the portal vein and its branches, which lessens the free circulation of blood through the *vena lienalis*. Ascites often takes place from this obstruction of the portal circulation, and œdema of the feet may follow. If there be meteorism, there may also be a greater or less dyspnœa, palpitation of the heart, nausea, etc. The patient loses flesh and strength and jaundice is apt to supervene.

DIAGNOSIS.—It may be distinguished from stricture of the gall-duct by the colicky spells in biliary stricture and by the absence of swelling of the spleen in that condition. It differs from *nutmeg liver* in the absence of enlargement of the spleen, and of lung and heart disease. The latter always exists in nutmeg liver. It may be distinguished from cancer of the liver by absence of enlargement of the spleen, and by potato-like shape of the liver in this *hob-nail* condition. Our prognosis may be favorable in the first stage of the disease, but after granulations have formed, a cure will be uncertain.

TREATMENT.—In the treatment of cirrhosis of the liver, resulting from the use of alcoholic drinks, the patient must first abandon drinking, and then take *nux vomica*, one of the best antidotes to tobacco and whiskey, in doses of gtt. 5, three times a day. If the digestion is affected, in addition to *nux vomica*, let him take gtt. 3 to 5 of the tincture of *pulsatilla*, alternated with *nux vomica*. Should digestion be much affected, and should there be pain in the stomach, of a burning character, gtt. 2 of tinct. of arsenic may be ordered just before each meal, well diluted in water. If inaction of the liver exists, which is often the case, gtt. 3 of tincture of *bryonia*, should be given three or four times a day, until the organ acts as usual. I am of the opinion, that the tincture of *chionanthus* in doses of gtt. 25 or 30, three times a day, would do well alternated with the other remedies. It is a very positive remedy in jaundice, and doubtless, like *chelidonium*, has a direct affinity for the liver. In the second stage of the disease, we must be guided by the peculiar symptoms of each individual case. There are no remedies that promise any great remedial effect, though some may mitigate symptoms.

Acute Yellow Atrophy of the Liver.—Yellow atrophy of the liver causes diminution of the organ in all its diameters, in consequence of its parenchyma becoming greatly degenerated. This substance is infiltrated with bile, which gives the liver a

deep yellow color. The exterior surface becomes wrinkled, and the gall-bladder shrivelled the latter having but a small quantity of bile. If the parenchyma be examined under a microscope, the secreting cells of the organ will be found mostly destroyed, and fat-globules and decayed remnants of the cells in their place. This disease is not very common but follows excess in venery, poor living, mental emotions and may exist in the last months of pregnancy. It runs a rapid course, frequently terminating in from twenty-four to forty-eight hours, but sometimes runs on from five to eight days.

SYMPTOMS.—Jaundice is always a result. It may appear at the outset, or it may set in later. Headache, dizziness, and stupor are very common accompaniments. There may also be grating of the teeth, spasmodic actions of the jaws, and dilated or contracted pupils. In some cases there are involuntary discharges of the fæces and urine, and in others no discharge at all. In the latter case the catheter is necessary, and cathartics are required.

Occasionally instead of stupor, there may be violent agitation, delirium, and spasms and tremors. More or less fever sometimes sets in with a chill. There is nausea, and vomiting sometimes of bloody secretions from erosions of the stomach with bloody fæces. The liver will be found very small by percussion. The diagnosis is very difficult, as it may be mistaken for typhus.

TREATMENT.—If it commences with a chill, followed by fever, aconite in doses of gtt. 1 every two hours, alternated with gtt. 2 to 3 of tincture of bryonia, will be the proper remedy. If head symptoms make their appearance, gtt. 3 or 4 of belladonna should be given three or four times a day, until the brain is cleared. Should there be nausea or vomiting. I use ipecac. in doses of gtt. 1 to 2 of the tincture of the fresh root every ten or fifteen minutes, until this symptom is controlled. If there is coldness of the extremities, dark stools, and a thickly coated tongue, with a dark streak in the centre, gtt. $\frac{1}{4}$ of leptandrin, or gtt. 10 or 15 of the tincture should be given every four hours, until the discharges are changed to a natural color. For the jaundice I do not think there is any remedy equal to chionanthus and berberis vulgaris, in doses of gtt. 30 to 60 each.

Cholecystitis.—Gall stones of various sizes form in the gall bladder, and occasionally are also found in the larger biliary passages; the ductus choledochus, hepaticus and cysticus. Their size varies from that of sand to gall stones as large as a hen's egg. They are oval, or round, when found singly; but more angular and serrated when there are many together. They vary in color, being black, yellow, brown, green, red or bluish, but most commonly they are black or dark brown. Stones are generally very bright, will swim in water, and are also very easily crushed be-

tween the fingers, and when dried, crumble. They are composed of cholesterine, a chalky mixture with pigment mucus, around a nucleus of lime and pigment. Their cause is not known. It has been conjectured however, that they are caused by a surplus of gall-fat or cholesterine, and again, that they are the result of a surplus of calcareous materials in drinking water, especially in the lime regions. It is more likely that they originate from inflammation of the gall-ducts, obstruction of the gall-ducts, cancer, and the like hepatic diseases. I once saw an extreme case connected with valvular obstructions in the aortic valves of the heart, and tuberculosis. Here there were two large gall stones.

SYMPTOMS.—In some cases, the symptoms are very obscure, and large gall stones may lie for years in the gall-bladder without any marked symptoms whatever. But should they once become incarcerated within the gall-ducts, they produce violent pain, which is called *gall-stone colic*, or *hepatic colic*. This frequently commences all at once, with extreme pain in the right hypochondrium and epigastrium, radiating to the navel, back towards the spinal column, upwards into the chest, thence to the scapula, and sometimes down the arms into the fingers. In severe cases, there is nausea and vomiting, cold perspiration, sunken features and eyes, pointed nose, and cramps in the feet and hands similar to cholera. Jaundice soon sets in, and is apt to continue as long as the gall-stones remain in the gall-bladder or duct. This disease however, may not occur where the gall-stones are incarcerated within the ductus cysticus, from the fact that the bile still passes into its proper place, the duodenum. Pain may continue for days, or if the stone happen to get out of the duct, ceases. The stone may pass out into the duodenum, and then be discharged with the stools. There was a case of that kind near Marietta not long since, in which several stones passed. All cases do not terminate so well. Sometimes the gall-stones perforate either the gall-bladder or the gall-duct. In such cases peritonitis is almost sure to ensue, and frequently death. One case occurred near Marietta, in which some stones as large as the end of the finger, made their way outward, and by suppuration, were finally discharged over the hypochondrium. Again, the calculi have been known to find their way into the stomach or the intestines, or through some portion of the abdominal walls. If the stones obstruct the gall-ducts, they cause abscess within the liver, and the consequences detailed under the head of suppuration in hepatitis. The total obstruction of the ductus hepaticus, or choledochus, may cause the blood to become so over-charged with the biliary secretion, that we have cholæmia—intense jaundice, which may be followed by delirium, or convulsions, and finally, death.

DIAGNOSIS.—If gall-stones pass off in the stools, the diagnosis is

quite easy, but otherwise quite difficult to make out. Jaundice is one of the characteristic signs of gall-stones, and its persistence, notwithstanding the remedies given regularly, is also strong evidence of their existence. The paroxysms of hepatic colic are also good signs.

TREATMENT.—The treatment has not been as successful as might be desired. To relieve the paroxysms of pain, *berberis vulgaris* has been used with some success. Chloroform has been praised for the same purpose. The carbonate of lime has proved very successful in relieving the pain. But *chelidonium* (celandine of England) in doses of gtt. 5 to 10 of the saturated tincture, has been reported as curative by some English writers. The tincture of the best *cinchona* bark is praised as a preventive of gall-stones, and some writers believe that it aids in dissolving the stones. *Podophyllin* is also useful in the expulsion of the stones. For the spasmodic condition of the system produced by the passage of gall-stones, *gelsemium* in doses of gtt. 30 to 40 may be given twice a day, until they pass, or a drop or two of tincture of *nux vomica* every hour, for the same purpose. I think that *chionanthus* will be found one of our best remedies, and may be ordered in doses of gtt. 10 every half hour. Nitro-muriatic acid may do much good towards the cure. *Euonymin*, in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$ is also worthy of a trial. If there be fever and great pain in the liver, *aconite*, alternated with *berberis vulgaris* should be given, and warm compresses may be applied over the liver to relieve the pain.

Jaundice.—This is not generally a disease in itself, but only a symptom of some morbid condition of the liver. It is manifested in the whole race by the yellow color of the skin and white of the eyes, and in the colored race, by the yellow color of the whites of the eyes. This color is from a deposit of the biliary pigment, *biliphæin*, or *cholepyrrhin* in the skin and eyes. It may also be found in the hair, nails and even the enamel of the teeth. After death, it has been seen in the mucous membranes, brain, nerves, &c. This yellow or icteric color varies in degree from slight yellow, to a greenish or blackish color. How this coloring matter gets into the blood again, so as to be thus deposited in the skin and whites of the eyes, and elsewhere, is not known. Leibig, Lehman, F. C. Schmidt, Stricker, Blondlot, Bernard and Frerichs, have endeavored to solve this difficult question. A common conclusion is, that the bile, in consequence of obstruction of the biliary ducts, is re-absorbed by the blood in the liver, whence it is distributed to the various parts of the system. This is a plausible conclusion, for jaundice follows many diseases of the liver that obstruct the biliary ducts, and disappears when this obstruction is removed. This may not explain all cases, for an autopsy reveals no obstruction in many case of jaundice. These cases are

generally associated with pneumonia, pyæmia, puerperal fever, rare cases of intermittent fever, yellow fever, with the toxic effects of mercury and other drugs, the bites of snakes, and chloroform inhalations. In this form of the disease, the most reasonable conclusion is, that it is caused by an inflammation of the portal veins, clogging up the blood, and preventing it from entering the liver, and so, as it circulates through the system, with the biliary constituents still in it, by some unknown process, these elements are deposited in various tissues of the body. There may be in addition to the jaundice, itching of the skin in small spots, all over the body, and in some cases so severe as to prevent sleep. The circulation is very slow, except in those cases connected with suppurative diseases, or some other acute disease. Xanthopia is one of its results where *white* appears *yellow* to the eye. Hemeralopia, or night-blindness may also occur in cases where the gall-ducts are obstructed by granulation. Jaundice often produces certain brain symptoms, as depression, coma, sopor, tremors, paralytical affections, dizziness, headache, delirium, wild excitement, convulsions, or both the last in alternation. The urine generally contains the coloring elements of the bile, giving it a deep yellow or brown color. When it is tested by nitric acid, it is colored green, which soon changes into violet, blue, red and orange color. The fæces are of a whitish or grayish color in these cases resulting from obstruction of the ductus choledochus. This disease occurs in born children, and is called *icterus neonatorum*. It is supposed to result from an accumulation of mucus in the gall-ducts. Sometimes a more grave form is produced by an inflammation of the umbilical vessels, and consequently pyæmia. The disease may occur in females in the last months of pregnancy.

TREATMENT.—I have generally succeeded with the tincture of chionanthus, in doses of gtt. 30 to 60, every three or four hours, where the disease is not caused by obstruction of the bile-ducts, where it is, other remedies will have to be used. Where there is pain in the liver, in addition to the chionanthus, I give the tincture of chelidonium, in doses of gtt. 5 to 10, every four hours. If the disease is from catarrh of the bile-ducts, the tincture of hydrastis, in doses of gtt. 5 or 6, every three hours, may be given with good effect. In chronic diseases, nitro-muriatic acid, in doses of gtt. 3, three times a day, will often prove curative. If jaundice is from induration of the liver, nitric acid, in doses of gtt. 3, every four hours may readily give relief. If there is a deficiency in secretion of bile, euonymus (tinct.) in doses of gtt. 30, every four hours, has proved effective with me. Where constipation exists, in addition to the other remedies indicated, tinct. of nux vomica in doses of gtt. 4 to 5, every four hours, will restore the peristaltic action and aid in restoring the functions

of the liver. *Berberis vulgaris* has cured some old chronic cases. If the stools are black, leptandrin, in doses of gr. $\frac{1}{2}$ to 1, three times a day, will be apt to give relief. If this fails, recourse should be had to bryonia, giving gtt. 5, of the tincture every four hours. I have recently succeeded in producing a good effect, upon the liver with bryonia. *Centaurea* has made many cures and is worthy of a trial, dose, gtt. 4 to 5. When caused by obstructions by gall-stones, this drug is one of our most reliable remedies. Where it is from mercurialization, the comp. tincture or simple tincture of iodine, in doses of gtt. 3 to 5, three times a day, alternated with the tincture of chionanthus, has proved very successful with me in many grave cases. Podophyllin, in doses, of gr. $\frac{1}{8}$ to $\frac{1}{4}$, three times a day, often aids where there is obstruction of the gall-ducts by gall-stones. If there be fibrile excitement, aconite should be given in doses of gtt. 1, three or four times a day. This is a special remedy where there is inflammation of the liver or its appendages. Where there is a dark-coating of the tongue, *myrica cerifera*, in doses of gtt. 10, of the tincture, has acted well in many instances. In cases connected with diseases of the heart, where the tongue is clear and there is induration of the liver, digitalis, in doses of gtt. 8 to 10, three times a day, will do good service. In chronic jaundice, from cirrhosis of the liver, gr. 1-100 to 1-50, of chloride of gold, three times a day, has made some remarkable cures. It must not be given in larger doses than the above, for it is highly toxic.

CHAPTER VIII.

DISEASES OF THE SPLEEN.

PHYSICAL EXAMINATION.—As a usual thing the adult spleen, in health, is some four or five inches in length, about three inches in breadth, and one and a half inches in thickness. On percussion, it yields a dull sound. It lies posteriorly against the eleventh dorsal vertebra; is bounded in front by a vertical line drawn from the anterior border of the axilla to the free end of the eleventh rib, superiorly by the ninth rib, and inferiorly by the free end of the eleventh rib. In percussion, the patient must be placed upon his right side, and the stomach be empty. If there be fluid in the left thoracic cavity, gas, or tumors of the liver, omentum, kidneys, etc., it is very difficult to define the size of the spleen. Ordinarily, an enlarged spleen can be easily detected by percussion, and is so much enlarged as to reach to the os pubis, and almost fill the abdomen. The enlargement can be felt whenever the spleen reaches below the eleventh rib; which is very often the case. The spleen is wedge-shaped and its surface is smooth, except when invaded by cancer. Its notch, which corresponds to its middle line, and which is more distinct when enlarged, distinguishes it. But little is known of the functions of the spleen. It seems to be related to the elaboration of the white blood corpuscles, but we do not know how it is thus connected with the blood making power.

Splenitis.—Splenitis consists of the blocking up of the smaller splenic arteries by fibrinous globules or coagula, which have formed in the left ventricle of the heart in consequence of endocarditis. These coagula are carried by the blood through the splenic arteries into its smaller branches, where they lodge. This condition may take place in consequence of long exposure to malaria, from typhus, septicæmia and acute exanthematic fevers. In such cases it seems to originate from a stagnation of the circulation within the splenic veins. An abscess may form, and suppuration go on until the entire organ becomes a mass of corruption, or it may produce pyæmia, or burst and discharge the pus into the peritoneal sac, producing peritonitis. Again, the pus may be discharged into the cavity of the stomach, colon, or pleural cavity.

SYMPTOMS.—The symptoms are very often rather obscure. If the enlargement is associated with endocarditis, it may often be more than double the normal size. In still other cases the enlargement cannot be detected. The enveloping membrane, or the adjacent organs, give rise to more or less pain, which is of a dull character,

and is increased by deep inspiration, percussion, or quick motions of the body. If the pain be sharp, it denotes that the inflammation is in the peritoneal covering. If suppuration is taking place, there will be chills, alternated with some fever. Dropsy and scurvy may also set in. If there be suppuration and perforation, there will be peritonitis. Chronic swelling and hypertrophy may cause many symptoms not found in splenitis, such as cough, anxiety, dyspnœa, nausea, vomiting, and sometimes dizziness, and clouded vision.

TREATMENT.—If the disease be from malaria, or from simple engorgement, gr. 2 of cinchonia, or gr. 2 of sulphate of cinchonidia, may be administered every two or three hours, alternated with gtt. 15 to 20 of the tincture of the leaves and stems of *ceanothus Americanus*. If hypertrophy exists, without active inflammation, I use the biniodide of mercury, gr 2, iodide of potassium, ʒ2, and aqua, ʒ8; dose, a teaspoonful *ter die*. Where there is active inflammation and fever, gtt. 1 of aconite, should be given every three hours. Should there be active inflammation of the capsule, accompanied by stitch-like pains, gtt. 2 or 3 of tinct. of bryonia should be given until the pain is subdued, and then * *ceanothus*, until all enlargement subsides. In chronic splenitis, *ceanothus* is the best remedy we have. Iodine may be used locally at the same time, or an ointment of *uedalia* may be applied over the spleen, while small doses of *ceanothus* may be given internally. If there is anæmia, the phosphate of iron should be alternated with the above mentioned remedies in small doses. Where there are violent stitches in the spleen, and pain in the left hypochondriac region, increased by coughing, with diarrhœa, gtt. 2 to 5, of the tincture of *sanguinaria*, every two hours, may be used. It is claimed by some writers, that the *silphium perfoliatum* (*Indian cup plant*) is a valuable remedy for this disease of the spleen. It may be given in alternation with *ceanothus Americanus*. The *polymnia uedalia* and *ceanothus*, both have a direct affinity for the spleen, and I have always found those remedies best, whose affinities were the most direct for an organ or tissue. Hence in splenitis or hypertrophy, the *ceanothus* and *uedalia* are the most reliable remedies we have. Sometimes, where there is anæmia, iron and *helonias* may be required to build up the blood, but in the simple disease of the spleen, they are not necessary.

*See the Author's New Remedies, for the properties of this plant.

CHAPTER IX.

DISEASES OF THE PANCREAS.

This conglomerate gland is analogous to the salivary glands, and is situated behind the posterior surface of the stomach, discharging its secretion by a main duct into the duodenum near the opening of the ductus choledochus into that intestine. The physiological function of the pancreas, until recently, was not well understood. It is now believed that the pancreatic juice transforms amylon into sugar, and, in conjunction with the bile and intestinal secretions, dissolves the fatty constituents of the food. Pathological changes in this gland are not of as frequent occurrence as of other glands of the body. Acute and chronic inflammation are the most common affections to which the pancreas is generally liable. Inflammation of this gland may terminate in suppuration, hypertrophy, atrophy, cancer, or fatty degeneration. The symptoms of the disease of this gland are very obscure. The causes also are obscure, and are perhaps always of a secondary nature; that is, disease of this gland generally originates from that of adjacent organs, such as the liver and stomach. The lungs and heart also, may so influence the function of the pancreas as to cause disease.

Pancreatitis.—This inflammation is characterized by redness, swelling, and softening of the areolar tissue of the gland. If the inflammation be intense, the gland becomes hard, and when thus firm and hard is apt to suppurate, or the inflammation may result in induration of the areolar tissue, and the obliteration of the glandular structure of the pancreas. This inflammation may also end in hypertrophy of the gland.

TREATMENT.—If the inflammatory symptoms are well marked, gtt. $\frac{1}{2}$, of aconite may be used every hour, alternated with gtt. 1 of belladonna. After the inflammatory symptoms are subdued, I give pulsatilla, gtt. 5, alternated with gtt. of iris versicolor, every two hours, and if these do not restore the functional activity, then small doses of the carb. of lime should be given, alternated with euonymus, in doses of from gtt. 10 to 20, of the tincture, every two hours. If the inflammation is connected with disease of the liver, and there is jaundice, which is often the case, chionanthus, in doses of gtt. 20 to 30, of the tincture, and gtt. 20 to 25, of the tincture of berberis vulgaris, should be given three times a day, until the jaundice disappears. The chionanthus doubtless has the same effect upon the pancreas as it is known to have upon the liver in jaundice.

CHAPTER X.

DISEASES OF THE KIDNEYS.

The kidneys being the organs that secrete the urine, it is apparent that any morbid changes in the physiological products of those organs, point with more or less certainty to disease. The examination, chemically and microscopically, of the urine is very necessary in diseases of the kidneys, and in those of other parts or organs as well. Its reaction is determined by simply dipping blue litmus paper into the urine, and if that fluid be acid, the paper turns red as soon as it dries. This acidity of the urine varies even in the normal urine. It is greater before meals, decreased after meals, and during the process of digestion is somewhat augmented by any acid taken into the system. An alkaline condition of the urine may result from alkalies taken into the system, such as sodium, potassium, lime or magnesium. In such cases yellow test paper is turned red when dipped into the urine. If the urine remains alkaline all the time, it denotes nervous depression, and exhaustion by mental labor, or spermatorrhœa. Lemon and orange juice may produce alkaline urine, and so may mucus and pus. Diseases of the mucous coat of the bladder also give rise to this alkalinity of the urine, and so does long retention of the urine. If there be an anæmic, chlorotic condition of the system, and specially after hysterical paroxysms, the urine is pale. In diabetes melitus, the quantity and specific gravity are much increased. Should the urea be much increased in amount, the urine will be of a deeper, darker color, but is generally clear when first voided. Urea is the principal product of the decomposition of nitrogenized substances, and consequently its amount may be taken as an index of the waste and repair of the tissues of the body. It is very abundant in cases of high living, from the fact that all the nitrogenized substances cannot be assimilated. Active exertion of body increases this waste in the form of urea; acute febrile diseases, profuse perspiration, and diarrhœa generally do the same. If there is blood in the urine it will be opaque. Blood is found in the urine in hæmorrhage from the kidneys or bladder and during menstruation. If from the kidneys, it will be uniformly mixed with the urine, and if from the bladder or womb, it is apt to be in clots. If there be bile in the urine, it will be very yellow, and white paper or cloth is turned yellow by it. Nitric acid dropped in a thin layer causes a play of colors, viz.: commencing with green and blue, then passing to violet, red, and finally to yellow

and brown. Bile is found in the urine in jaundice, pyæmia, yellow atrophy of the liver, and in some cases of pneumonia of the right side. Certain drugs color the urine, such as santonin, rhubarb, senna, turpentine, madder, beets, tar and creosote. If the urine be turbid when first voided, it is an evidence of the presence of epithelium, thrown off by catarrhal processes from the mucous linings within the urinary apparatus. Leucorrhœa and gonorrhœa produce whitish flakes in the urine. In Bright's disease, there are uriniferous tubules present in the urine, which soon settle at the bottom of the vessel as a downy sediment. When pus settles as an opaque, creamy or clayey mass, (which is converted into a dense gelatinous cloud by the addition of potassium, and has a foul, ammoniacal smell), it is evidence of suppuration, or shows that an abscess has opened into some portion of the urinary organs. In chronic catarrh of the bladder, pus forms a layer of grayish-white sediment at the bottom of the urinal. Uric acid, when the urine gets cool, settles in little red crystalline granules. The urates settle in a pinkish or whitish sediment. The urine containing the urates generally shows an acid reaction, and if a few drops of nitric acid be added, the mixture slowly evaporated, over a lamp, to nearly a dry mass, and a drop of ammonia added, a purple color will be produced. This play of color occurs in acute rheumatism, in leukæmia, and in acute inflammations and fevers. The phosphates of the urine are combinations of phosphoric acid, sodium, lime, and magnesium, and such urine is always alkaline in reaction, yields when cold, a white sediment, and is rendered clear by adding acetic acid to it. The phosphates are found with pus, in chronic catarrh of the bladder; and in hyperæmia, or paraplegia. In such cases the urine generally has an ammoniacal odor.

The phosphates may exist in excess during convalescence from acute diseases; in nervous debility; mental anxiety; spermatorrhœa; and in acute inflammatory diseases of the nervous structure. They may also occur in fractures of the skull, especially when inflammation takes place in the brain. They may result from acute rheumatism, and from the use of animal food. If grape sugar be present, the urine soon becomes semi-liquid, viscid and inspissated, and the specific gravity will be higher in proportion to the amount of sugar in the urine, ranging from 1030° to 1040°. If such urine be mixed with caustic potassium and then boiled, it turns reddish brown by degrees, and emits the odor of molasses, especially upon the addition of nitric acid. If there be albumen in the urine it foams when agitated. Heat detects the albumen by quickly coagulating it, and nitric acid causes a white precipitate. Large amounts of albumen cause albumenuria. Among the sediments of the urine are light, flocculent and cloudy deposits

of mucus, epithelial cells and spermatozoa. A yellow, orange or pinkish deposit generally proves to be urates. A dense, white deposit, dissolving in acetic acid, usually consists of the phosphates. If the deposit be crystalline, of a reddish color, and small in quantity, it is uric acid, blood on the contrary, causes a dark, sooty, dingy-red color. The quantity of urine varies considerably in health. In diabetes it is greatly increased; but fevers always decrease the quantity.

Diabetes Mellitus.—Diabetes mellitus consists of a peculiar diseased condition of the *vagus* nerve, causing excessive secretion of urine, which contains grape sugar. There is also a form, *diabetes insipidus*, which is an excessive flow of urine, without sugar, but which contains other substances akin to sugar. Some writers, as tuberculosis is a common complication of diabetes, attribute the formation of sugar to the lungs. Others again, believe that the liver elaborates this sugar in such large quantities that the lungs cannot transform or destroy it, and so it comes into the general circulation, and is excreted by the kidneys. Bernard has shown that this sugar is fabricated by the liver. We do not know why the liver forms it in such excessive quantities, nor do we know why the lungs do not transform it into heat. It may be that some morbid condition of the brain gives rise to the disease. Bernard found that the piercing of a certain part of the brain of animals, produced sugar in the urine, and I have seen it produced in students at school, where they studied too intensely.

SYMPTOMS.—These are well marked. The excessive quantity of urine is noticed by the patient before other symptoms make their appearance. Then there is great thirst and hunger; dry skin; constipation, with dry, hard stools; want of natural warmth; constant wasting away of the flesh; loss of sexual desire and power; depression of mind; finally phthisis supervenes, and ends the scene.

TREATMENT.—I have treated a great many cases with such old remedies as *helonias dioica*, *lycopus virg*, *trillium*, *nitrate of uranium*, *nux vomica*, etc., but with only partial relief to the patient. Recently, by the advice of Dr. J. S. McClanahan, of Boonville, Mo., I have treated this disease very successfully with *rhus aromatica*, in doses of gtt. 30, of the tincture, or gtt. 20, of the fluid extract, given every two or three hours through the day. One of my first patients was an old man, some 74 or 75 years of age, who was very weak, and was passing a large quantity of urine, the specific gravity of which was 1040°. Upon evaporation upon a slip of glass, over a lamp or candle, this yielded a large percentage of molasses. I put this old gentleman upon the *lycopus*, and *nitrate of uranium*, which treatment he continued

for one month, and which reduced the quantity of the urine, but not the quantity of the sugar. I then put him upon the fluid extract of *rhys aromatica*, gtt. 30, three times a day, which he continued for one month, with a great decrease of the quantity of urine and sugar. I now took the specific gravity of the urine and found it to be 1032°. I continued the prescription another month, at the end of which he appeared much better, and said he felt well. He was gaining flesh and strength rapidly, and I advised him to continue the treatment another month, and at the end of this time he reported himself perfectly well, and so continues up to last accounts. The *rhys* is reported to be as good in diabetes insipidus as in diabetes mellitus. By thus quoting an extreme case of diabetes mellitus, in an old man 74 or 75, I desire to show that the *rhys aromatic* is the most reliable remedy that has hitherto been used. The old gentleman had been visited by two of his brothers, both old and reputable physicians, both of whom pronounced his case incurable. He lives yet as a proof of the power of the *rhys aromatica* over diabetes.

Hæmaturia.—When there is hæmorrhage from any part of the urinary organs the urine is colored more or less, according to the quantity of blood passed, and upon cooling, a sediment, more or less thick, forms at the bottom.

CAUSES.—It may arise from injuries, inflammation, typhoid and exanthematic fevers, Bright's disease, irritating drugs, calculi, and ulcers, etc. In scurvy, and yellow fever, hæmorrhage seems to be the result of a general dissolution of the blood. If the hæmorrhage be from the kidneys the blood when passed will be thoroughly mixed with urine, and will be accompanied with pain in the kidneys, dysuria, and sometimes slight albuminuria. Should the blood be from the uterine there will be spells of severe colicky pains like those caused by calculi. If the hæmorrhage be from the bladder, there will be only streaks of blood in the urine, which are discharged at the close of urination, with pain in the bladder and more or less strangury. Occasionally there will be a discharge of mucus or pus. Hæmorrhage of the bladder is not very profuse, but if it continue long it may cause anæmia and great prostration of the whole system.

TREATMENT.—If caused by external violence, small doses, say gtt. $\frac{1}{2}$ to 1 of *arnica* every two hours, may be alternated with other proper remedies. The *rhys aromatica* has proved itself to be valuable in this disease, as well as in diabetes. It may be given in doses of gtt. 30 to 60 every hour or two, according to the severity of the disease. If constant strangury is present, drop doses of tincture of *cantharides* may be given every hour, until this symptom is relieved. Where there is a great deal of slimy mucus passing with the urine, an infusion of *uva ursi* may be used freely,

until the urine is clear. If the hæmorrhage be from the kidneys, and there be great pain in that region, small doses of terebinthina may be given every hour, say gtt. 3 to 5 in mucilaginous drinks, as gum arabic or ulmus. Where I have had cases connected with anæmia, I have found the muriated tincture of iron in doses of gtt. 15 to 20 in water, a very positive remedy. If hæmorrhage occur with catarrh of the bladder or calculi, I use *lycopus alternatus* with *capsella bursa pastoris*, (shepherd's purse), or *chima phila umbellata*. The *equisetum hyemale* is also a good remedy. If the hæmorrhage is passive, *trillium* is a valuable drug, as is also the tincture of *erigeron*.

Acute Bright's Disease.—This consists of enlargement of the kidneys, with hyperæmia of their papillæ. The uriniferous tubules, especially those of the cortical portion, are filled with coagulated cylindrical fibrin, which is discharged with the urine in connection with epithelial cells and blood-corpuscles.

CAUSES.—It may follow exposure to cold and external injuries, or it may be caused by irritating drugs, such as cantharides, copaiba, or turpentine. It may also result from scarlet fever, measles, typhus, typhoid, and sometimes remittent fever.

SYMPTOMS.—The acute form generally commences with a chill, followed by fever, nausea, vomiting, and pain in the region of the kidneys, extending along the course of the ureters. There is constant desire to urinate, but the quantity passed is small, and is of a dark, dirty reddish, or brownish color. This soon forms a flocculent, reddish, or yellowish sediment, containing the above named cylindrical casts, with epithelial cells and blood-corpuscles. If such urine be boiled, and nitric acid added, it yields large quantities of albumen. Oedema of the eyes, face and extremities soon takes place.

TREATMENT.—When attended with dropsy, tincture of *apis mel.*, alternated with tincture of arsenic, may inaugurate the treatment. *Asclepias syriaca*, has also proved valuable in such cases. I have used the tincture of *apocynum cannabinum* in doses of gtt. 5 to 20, every three hours, with the best effects, and at the same time, have given the tincture of *euonymus atro-purpureus*, in doses of gtt. 25 to 30, every three hours. The chloride of gold and sodium, in doses of gr. $\frac{1}{2}$ to 6–10, has proven effective in some cases. It may be given three times a day, but never in larger doses than the above. The nitrate of *ursnium* has lately been introduced as a remedy in this disease; the dose is gr. 1–10 to 1–20, three times a day. *Pilocarpin* has also been lately recommended for this disease. Prof. J. M. DaCosta reports a case cured by him in the Pennsylvania Hospital. Many flattering reports come from Bellevue Hospital of the efficacy of *jaborandi*. If there is great debility, *helonias dioica* will aid other indicated remedies in restoring the

strength. If there be a want of nervous tone, phosphoric acid (Horsford's Acid Phosphate), or the hypophosphites may be given with the very best effect. The benzonate of ammonium may be ordered where the urine is smoky and there is pain in the kidney, and when the head is heavy and stupid.

Chronic Bright's Disease.—This disease may be divided into three stages: (1) hyperæmia and exudation; the kidneys in this stage are enlarged and the uriniferous tubules of the cortical substance contain a fibrous exudation. The epithelial cells are not much changed. (2) In the second stage the exudation is changed into a fatty mass, and the kidneys become still more enlarged, owing to the fact that the uriniferous tubules become filled with epithelial cells which swell, causing the cylindrical casts of the fibrin, which soon collect therein, to undergo a fatty degeneration or transformation. (3) In the third stage atrophy takes place, caused by discharge of the destroyed epithelial cells, exuded cylindrical casts and fatty substance, and by the final destruction of the uriniferous tubules.

CAUSES.—Exposure to cold and wet may cause this disease, hence it is found more in low, damp, cold climates than in the warmer and drier localities. The abuse of acrid diuretics, such as cantharides, copaiba, turpentine and other like articles, may produce the disease. The use of alcoholic drinks is also a frequent cause of this affection. It may result from caries and necrosis of bones, long continued suppuration, and a cachectic state of the system. It may also be the result of certain dyscrasiæ: such as gout, rachitis, scrofula, syphilis and malaria.

SYMPTOMS.—There is generally more or less pain in the kidneys. The skin and mucous membranes are pale, and the patient complains of being very feeble and anæmic. The urine may at first be diminished in quantity, and afterwards increased, but is always loaded with albumen. It is of a pale yellow color, and foams readily when shaken, the foam remaining longer than in any other urine. If heated, and if a few drops of nitric acid be added, it coagulates. Dropsy generally soon shows itself, first in the eyelids, face and feet, and finally upon the upper extremities, scrotum and abdomen. The fluid may fill the cavities of the chest and surround the heart. This affection may be complicated with pleuritis, peritonitis, pericarditis and meningitis; or follow catarrhal bronchitis, catarrh of the intestines, and hypertrophy and valvular obstruction of the heart. Should the secretion of urine be greatly interrupted there may be uræmia, vomiting, stupor and convulsions. The disease may last for years, or may soon terminate.

TREATMENT.—If caused by exposure to cold, I begin the treatment with small doses of dulcamara, say gtt. 10 to 15, three times a day. If it be the result of using acrid drugs, gtt. 5 of nux vomica

three times a day will do good service. Should it arise from the abuse of alcoholic drinks, tincture of arsenic alternated with pulsatilla will be the proper treatment, and a milk diet is necessary, If it follow a cachectic state of the system or suppuration, I give the chloride of gold in doses of gr. 1-100 three times a day, alternated with the phosphate of lime. If debility exist, I prescribe helonias dioica in doses of gtt. 10 to 20 every three hours, alternated with gtt. 5 of phytolacca. *Euonymus atropurpureus* in the form of a tincture or fluid extract, will aid in regulating the action of the liver, and increase assimilation. If there is excessive flow of urine, *rhus aromatica* in doses of gtt. 15 to 30 of the tincture three times a day, will regulate the action of the kidneys. Where there is deficient action, and a tendency to dropsy, the apocynum can. in doses of gtt. 10 to 15, may be used every two hours, alternated with the tincture of *chimaphila*, or moderate doses of the tincture of *eupatorium purpureum*. It requires strict attention to cure this disease.

Interstitial Nephritis.—This disease has its seat in the uriferous tubules, and nephritis vera attacks the interstitial tissue which connects these tubules and the capsules of Malpighi. In nephritis the kidney is enlarged, softened, and of a dark red color; and its capsule is injected, thickened, and easily separated. If cut and pressed, it exudes a thick bloody fluid. As the disease advances, the parenchyma assumes a dirty grayish or brown color; finally suppurating and forming abscesses in various places, which may at last unite. When the collection of pus becomes very great it may be discharged, either into the renal pelvis, the abdominal cavity, intestines or externally.

CAUSES.—External injuries are the most common cause of this affection. It may also result from renal calculi; pieces of bone, (sequestra of caries of the spine); inflammation of adjacent tissues; exposure to cold and wet; or infection of the blood by ichor.

SYMPTOMS.—It commences with a chill, followed by more or less fever and pain in the affected kidney, when only one kidney is affected, or in both kidneys when both are. Pressure aggravates the pain, and so does motion, coughing, sneezing and deep inhalation. The pain soon extends along the ureters to the bladder, thigh, and upward into the shoulder of the affected side. There is also a painful desire to void the urine, which usually only passes off in small quantities, and is thick, dark, and mixed with blood. If both kidneys are highly inflamed, there is generally suppression of urine, a condition which is soon followed by coma, delirium or convulsions. Nausea and vomiting are always present. If chills return at the height of the disease it denotes suppuration. This form of inflammation may also end in rupture and perforation with their various consecutive symptoms.

The prognosis depends upon these different complicated conditions.

TREATMENT.—In inflammatory conditions, aconite in doses of gtt. 1 every hour, is the indicated treatment. In the advanced stage, if there be much desire to urinate, small doses of tincture of cantharides, every hour, act admirably. Pulsatilla in gtt. 1 to 2 doses may be alternated with the cantharides. If delirium or sopor supervene, hyoscyamus in doses of gtt. 5 should be ordered every two hours. If suppuration take place, the sulphide of calcium may be used in 1 or 2 grain doses every two hours. This lessens the suppurative process more than any other remedy.

Renal Colic.—This is an extremely painful affection, being usually caused by the passage of fine calculi through the ureters into the bladder, which are finally discharged through the urethra. These calculi form in the calices of the pelvis of the kidneys. Occasionally calculi of considerable size pass down the ureters, but they are generally small. Sometimes they cause the most excruciating pain as they pass along into the bladder, giving rise in males to contraction of the spermatic cords. The pain is thus distinguished from that of all other affections of the abdomen.

SYMPTOMS.—There is often vomiting, cold perspiration, cold extremities, small, quick, pulse, and collapsed features, indicating extreme agony. The pain ceases as soon as the stone enters the bladder, except in rare cases, where the calculus happens to become incarcerated, when it plugs up the ureter, and causes either bursting of that tube, or uræmia. The latter is apt to prove fatal. Coagulæ of blood may cause similar painful spells; and so may parasites. The pain is most severe in highly nervous constitutions, owing to the fact that the calculi cause very great spasmodic contraction of the ureters.

TREATMENT.—Where the pain is very severe, and of a spasmodic character, I find gtt. 1 to 3 of belladonna very useful, given every hour until the mouth becomes a little dry, and if that does not afford relief, give gtt. 20 of gelseminum every hour, until the specific influence of the medicine is manifested upon the eyelids. The cannabis indica in doses of gtt. 5 every hour or two, alternated with the bromides, will give great relief. If urine be dark colored, and the pain extend to the bladder, the tincture of coccus cacti (cochineal) gives good results, in doses of gtt. 5 or 6 every hour. Berberis vulgaris in doses of gtt. 10 to 20 every hour, also relieves the pain, and so will gtt. 5 or 6 of chlorform. The carb. of calcium is a valuable medicine for the same purpose. To cure the disease the citrate of lithium is the best remedy, administered in gtt. 5 doses every hour or two, until relief is obtained and then three times a day, until the urine is rendered alkaline. Ozonic ether is also effective in doses of ʒss three times a day in

water until the calculus is dissolved. If the calculi be phosphatic, the benzoate of ammonium is the proper remedy, or the carbonate of lithium in doses of gr. 5 every two or three hours. If these are not on hand, the citrate of potassium may be given in large doses, every three hours.

CHAPTER XI.

DISEASES OF THE BLADDER.

Cystitis.—Inflammation of the bladder may have its seat in the mucous coat, in the serous covering, or may affect the entire structure of this organ. Where it is confined to the mucous coat it is called catarrhal cystitis, and is characterized by redness, swelling, and an increase of mucous secretion. If it assumes a chronic form, the mucous coat may become softened, thickened and infiltrated, and covered with a purulent secretion of grayish color.

CAUSES.—Exposure to cold and wet is a fruitful source of this disease. It may also follow injuries, irritating drugs, such as cantharides, turpentine, and balsam of copaiba; irritating calculi, retention of urine, and inflammation of adjacent organs.

SYMPTOMS.—There is severe pain in the region of the bladder, which is aggravated by pressure. The pain may finally extend into the kidneys and through the urethra. In addition to the above marked symptoms, there is painful micturition, the urine being voided drop by drop, with a sense of scalding of the urethra. The urine is highly colored and sometimes mixed with blood. The fever finally becomes high, and then there is vomiting, prostration, singultus, and cold perspiration over the body. In chronic cystitis, there is not such excruciating pain, but very frequent desire to void the urine, which is turbid, and yields, upon standing, a heavy, bright, thick, viscid sediment, and has an ammoniacal odor. In some cases the bladder becomes so dilated as to prevent the patient from completely emptying it. Paralysis of the sphincter results from this condition, and the urine passes off involuntarily. In advanced age, the chronic form is subject to frequent acute attacks from anything that may irritate the organ.

TREATMENT.—In the acute form of cystitis, where the fever is high, the patient should have gtt. 1 of aconite every half hour, or hour, until the fever is reduced, and for the pain, gtt. 2 to 3 of belladonna, every two hours. If there be violent burning in the bladder, tincture of arsenic should be given in doses of gtt. 1 to 2 every two hours, instead of the belladonna. If there is tenesmus and burning, drop doses of the tincture of cantharides, should be ordered every hour until the symptoms are relieved. If cystitis is caused by a fall or blow, drop doses of arnica every hour will give much relief, and should alternate the aconite. In the chron-

ic form, tinct. of *actinomeris helianthoides* is the remedy, in doses of $\frac{3}{4}$ 1 every hour, with drop doses of *cantharides*. In the chronic form the urine should be examined with a good microscope, and if there be calculi, the citrate or carbonate of lithium, gr. 3 to 5, should be given, three or four times a day, until the urine is cleared of the calculi. If there is much mucus in the urine, *buchu* and *uva ursi* may be administered in the form of infusion, or tincture. I have often found that the tincture of *chima-phila* will readily arrest mucous discharge. If the urethra and glans penis be painful, *parcira brava*, in the form of tincture or fluid extract, should be given, in doses of gtt. 30 to 60 every two hours until the symptoms are relieved. In old persons with chronic cystitis, the turpentine emulsion, in small doses often acts well. If there is great strangury, the tincture of camphor, in doses of gtt. 5, every two hours often gives relief. The tincture of *erigeron* is also a valuable remedy, in doses of gtt. 20 to 30 every two or three hours. *Santonin*, in doses of gr. $\frac{1}{2}$ to 1 every four hours, has met with much success. Recently, the *actinomeris helianthoides* has proved, with me, one of our most trustworthy remedies. Where there is much mucus, the tincture of *hydrastis canadensis* has wrought a rapid cure, and so has *silphium perfoliatum*.

Vesical Calculus.—The calculi vary in size from those the size of an egg or larger, to those that are only visible with the microscope. They vary also in shape. Some are round, some oval, some rough and some irregularly shaped. They consist of a combination of uric acid and ammonium, magnesium, or lime, etc. Some are hard, heavy, brown, yellow or grayish-white. Those which are composed of the phosphates are brittle, light, crumbly, and of a grayish-white color, sometimes of a yellow color. There are some composed of the oxalate of lime. These last are the heaviest and hardest of the calculi found in the bladder and are of a dark brown or blackish color, and uneven outside. Some consist of the carbonate of lime, cystine and xanthic oxyde, but these are encountered but rarely. Those composed of mixtures of urates, phosphates and oxalates are of the most frequent occurrence. In these mixtures there is usually a nucleus of the oxalate of lime first formed, and then the other earthy salts gradually accrete around this nucleus. The calculi may be few or many. They may first form in small particles in the kidneys, and then work their way down the ureters into the bladder, and gradually increase in size. If they are first formed in the bladder they are solitary.

SYMPTOMS.—In some cases the patient feels the calculus in the bladder, as if it were a heavy substance moving about as he moves. If the stone be not impacted, there will be pain

in the neck of the bladder when walking, standing, at stool, and riding in a carriage or on horseback. At rest, or lying on the face or back, the pain may be much less, or altogether cease. Severe exercise is liable to produce a discharge of bloody urine, and more or less catarrhal inflammation. Sometimes the pain is chiefly felt along the urethra and gland penis. In many cases there is severe strangury, just as the last of the urine is passing, which continues for some time after urination. Sometimes the calculus, if not impacted, is liable to fall down into the neck of the bladder, producing pain and sudden stoppage of the flow of urine. Occasionally the calculus becomes wedged in the neck of the bladder, causing constant pain, and difficulty in voiding the urine. It may often cause spasm in the vagina in females, or in the testicles of men, and in the kidneys, perineum and legs. Examination by the metallic sound reveals the calculus as a hard body, which, on being struck, gives the characteristic metallic sound.

If the stones are large and hard, they cannot readily be dissolved, and belong to the domain of surgery. In the early stage however, something may be done to prevent the formation of calculi, especially if they be of the soft kind, as phosphates. I am confident that the carbonate and citrate of lithium in gr. 5 doses, have a great tendency to check the formation of these calculi, and I believe that they aid in dissolving them. I feel sure that the *actinomeris helanthoides* in strong tincture, aids in preventing their formation, and perhaps, as is affirmed by Dr. Turk, of N. C., in dissolving calculi already formed. *Sarsaparilla* is believed to have the same effect, and so is *hydrangea arborescens* given freely. *Chimaphila*, *erigeron*, *eryngium*, *eupatorium aromaticum* and *corydalis* have all been recommended as efficient remedies, although their lithontriptic powers may not be as positive as has been supposed. I have never entirely dissolved the calculi when large, but have often carried them away when small, by giving carbonate of potassium, alternated with *chimaphila* and *hydrangea* in large quantities in the form of infusion. If upon examination with the microscope, I find small calculi in the urine, I give the carbonate of lithium in doses of gtt. 5 three times a day until it gives relief.

CHAPTER XII.

DISEASES OF THE MALE ORGANS OF GENERATION.

Gonorrhœa.—This is a catarrhal inflammation of the genital organs of a specific character, acquired by coition with an individual already contaminated. It is first seated, in the male, in that portion of the urethra which lies back of the glans penis, the inflammation extending sometimes back to the bulbos and the membranous portion of the urethra, and finally to the neck of the bladder. In females the inflammation extends over the vulva, vagina and urethra, sometimes spreading back even to the neck of the uterus. In this last case it is quite troublesome.

SYMPTOMS.—The stage of incubation is generally from three to eight days, although I have seen cases in which the disease showed itself in some thirty-six or forty-eight hours. These cases, however, are rare, for it generally takes six or eight days for the virus to produce its specific effects, and it *may* take two or three weeks. One of the first symptoms is a tickling sensation at the orifice of the urethra, and with males, in the fossa navicularis. Very soon there is an increased secretion of mucus in the urethra, which causes its lips to stick together. The tickling soon changes into a burning sensation, and the mucus, which was at first transparent, gradually grows thick, yellowish, greenish or even bloody. The orifice of the urethra becomes highly inflamed and swollen, and tender when pressed between the thumb and finger. A rather *tensive* pain extends along the urethra into the testes and inguinal regions, and micturition becomes very painful and frequent. In some cases the glands in the inguinal region become swollen and sore, like a bubo, but unlike it do not suppurate. If the patient exercises freely, or indulges in highly stimulating food or drink, the testicles become inflamed and swollen, and the spermatic cords sore and enlarged. In what is called synochal or phlegmonous gonorrhœa, the inflammation extends into the parenchyma of the glands, which become dark and swollen. It may also extend into the corpus cavernosum, with exudation, forming hard nodes in the penis. This gives rise to chordee, which, during an erection, draws the organ sideways or downwards, giving great pain to the patient. Occasionally the urine can only be passed in a small stream, or drop by drop, with great straining and pain. In this case the discharge may become dark, bloody, or ichorous. The prepuce may contract, and phimosis may result; or contraction may occur behind the

glans penis, and paraphimosis may set in, which renders the suffering still greater. In some extreme cases the inflammation spreads back to the neck of the bladder and the adjacent areolar tissue, giving rise to abscesses which form and break through the perinæum, forming fistula urinæ. Again the disease may be of an indolent character, giving rise to but little pain, and little inconvenience, except a profuse mucous discharge. Sometimes there is an erysipelatous gonorrhœa, in which the glans penis becomes greatly inflamed and swollen, and there is a watery, ichorous discharge. The disease, if left to itself, generally runs into a chronic form, called gleet. When this happens there is no pain, except a fixed pain in the fossa navicularis, and the discharge is generally thin and watery. Sometimes, however, it is thick and yellow, now passing freely, and now in small quantities. This form may continue for years, in spite of all treatment that is instituted. In females the symptoms are very similar to those above described, but the disease is less painful to them than to men. In high degrees of inflammation, and when it extends to the urethra, the clitoris, and labia, it may become painful. In such cases the discharge is quite profuse and deeply colored, excoriating the internal parts as it passes off. It may produce condylomata on the inside of the thighs, on the labia, and around the anus, causing much suffering. Excoriations and ulcers often occur upon the os uteri, and sometimes the disease extends into the womb and ovaries, producing chronic catarrhal affections that are very difficult to cure. A non-specific form of catarrhal inflammation very much resembles gonorrhœa, and it requires a very thorough knowledge of the characters of each to distinguish between them. Non-specific or benign affections of the genital organs are milder than gonorrhœa, and run their course in a few days without treatment. It is often quite difficult to distinguish between gonorrhœa in a female and an acrid case of leucorrhœa, but it must be remembered that acrid leucorrhœa may produce a discharge in a man that has not had intercourse with a woman affected with gonorrhœa. The peace of families depends upon the proper diagnosis in such cases.

TREATMENT.—I have found that gtt. 1 of aconite and gtt. 20 to 25 of gelsemium every three or four hours, and a wash of the sulphate of zinc, gr. $\frac{1}{2}$ to 1 to the ounce of water, is all that is required in the first stage of the disease, and often aborts it. If the inflammation is high, and the discharge scanty, gelsemium should be continued until the inflammation is materially lessened or subdued. An injection of \mathfrak{z} 1 of tincture of yerba reuma to \mathfrak{z} 3 of water, is a very valuable remedy, so also is boracic acid, sat. As soon as the inflammatory symptoms are subdued, gtt. 5 of cannabis sativa should be given every three hours. This and the cannabis indica

are valuable remedies. In the subacute stage I give an injection of *hydrastis canadensis*, ζ 1 to aqua ζ 16. If there are painful erections, chordee, and inflammation extending into the bladder, drop doses of *cantharides* should be given until these symptoms are subdued. Should the disease produce orchitis, small doses of *pulsatilla*, say gtt. 3 every hour, and a poultice of mullein leaves will give excellent results. In the advanced stage, where the discharge is profuse and thick, gtt. 10 to 15 of *copaiba* three times a day, will aid in the cure. I have found the tincture of the oil of sandal wood (1st dec. dilution) to do better, indeed, than *copaiba*. Recently the *eucalyptus* has been highly praised as a curative in this disease. I have had much success lately in several severe cases with *piper methys.*, the *kava kava*, given in doses of gtt. 30 to 40 three times a day. Some writers also speak highly of the *silphium gummiferum*. I have succeeded in aborting the disease by using gr. 5 of permanganate of potassium to the ounce of water, as an injection, twice daily for three days, and then using gr. 1 to 2 of it to ζ 1 of water. If the discharge becomes very thin and profuse, an injection of gr. 5 of alum to the ζ 1 of water will usually check the flow. An injection of the tincture of *yerba reuma*, ζ 1 to ζ 3 of water, is also positive.

SEQUELÆ.—One of the most common complications is orchitis. Very often one testicle swells and the swelling extends to another. At first this may be soft and elastic, but it soon becomes hard, painful and red, and is attended with more or less fever. Orchitis follows strong injections, too free a use of astringents, undue exercise and taking cold. It is very apt to supervene where the gonorrhœal discharge is too suddenly suppressed by injections.

TREATMENT.—Orchitis caused by taking cold should be treated with small doses of *clematis* and *dulcamara*, and poultices of warm, fresh, green mullein leaves. As an internal remedy I have found gtt. 2 to 3 of *pulsatilla*, every two or three hours, very successful. *Tussilago* may be used if the above fails. *Rhus tox.*, in doses of gtt. $\frac{1}{2}$ to 1 every three hours, will aid in the cure. If the prostrate gland is involved in the inflammation, *thuja* acts well in gtt. 2 to 5 every two hours, alternated with tinct. of *pulsatilla nut.* (the *anemone*).

Vesical Gonorrhœa.—If the disease be transmitted to the bladder by suppressing the discharge with astringent injections, there will be violent pains in the region of the bladder, perinæum and anus, with a constant desire to urinate, only a few drops passing at a time. The treatment is similar to that of cystitis. If there is a burning sensation in the bladder, the tincture of *cantharides*, in doses of gtt. 1 to 3, may be given every one or two hours until this pain ceases. *Copaiba* in small doses may then be prescribed for a few days.

Bubo.—The inguinal glands are liable to inflame in this as well as other diseases of the genital organs. It is possible for the virus, by absorption, to produce this affection of the glands, but it is most commonly superinduced by over-exertion or suppression of the discharge. As soon as the glands are discovered to be enlarged, indurated and sore, they should be painted with an ointment of iodoform, and the comp. tincture of iodine given in doses of gtt. 3 every three hours.

Stricture of the Urethra.—This consists in a fibrous hardening of certain portions of the urethra, whereby the organ becomes so narrowed that the urine can only pass through with difficulty or perhaps not at all. The main seat of this stricture is in the membranous portion of the urethra and fossa navicularis, though other parts may also become diseased when involved in the inflammatory process. The first symptom is the difficulty in making water. The stream of urine will be small, *twisted, split and jerky* in its flow. Very often from the bladder's not being completely emptied, there will be dribbling of the urine for sometime after micturition. The strictures that follow this disease are generally caused by over strong injections, such as nitrate of silver, sulphate of zinc and copper, or any other strong substance.

TREATMENT.—Clematis may aid in the removal of this trouble, and so may digitalis. Dulcamara and pulsatilla are also valuable remedies. Rhus tox. will also sometimes give excellent results. Occasionally the introduction of bougies, of the proper size, will overcome the stricture.

Syphilis.—The *chancre* is the primary lesion of syphilis. The term *chancre* is derived from the word *cancer*, which means a corrosive *ulcer*, with hard bottom and callous edges. This description of the chancre frequently corresponds to that of the syphilitic ulcer. It usually commences upon the genital organs, where the virus generally first infects the patient. In males, the glans penis, prepuce, frænum, front part of the urethra, external parts of the penis, scrotum, and sometimes the groins are primarily infected. In females, the labia, vagina, urethra, and even the neck of the uterus are first attacked. In rare cases, it is possible for the virus to be transferred to such portions as are liable to be infected by it, as the lips, tongue, nipples, denuded parts of the fingers, and other portions of the body. It is an unsettled question as to whether chancre is ever merely a local affection, or always constitutional. The latest opinion, of at least a majority of writers, is the following:—there are two kinds of virus; one, which they think never causes anything but a local complaint, consisting of an ulcer, where the virus is inoculated into the skin, and sometimes more or less suppuration of adjoining lymphatic glands. The other virus invariably produces a local ulcer and

constitutional disease, which extends its destructive disturbances to the whole nutritive system. The following characteristic differences are given, to wit: the simple chancre develops itself out of a macula or papula, the surface of which continually peels off until the skin appears excoriated; or else we see at first a small vesicle or pimple, which finally bursts. We may also observe a *chafed spot*, which does not heal, but soon becomes covered with a dirty exudate finally forming an ulcer, which in different cases may present quite a variety of aspects. It may rapidly decompose the parts in which it is located, spreading in various directions, having well defined edges, and the basis being covered with a dirty looking fatty substance, which is called *diphtheritic chancre*, or the ulcer may be rather superficial, and only look like an excoriation of the skin, spreading gradually in circumference, but not in depth. This is the superficial chancre. Again, the disease may develop itself in a sebaceous gland, in which case it shows a very small circumference, but appears comparatively deep. This is the follicular chancre. All these forms of simple chancre may assume a phagedaenic or even a gangrenous character, but they have no induration at their basis, and consequently are called soft chancres. The ability to distinguish between a soft chancre and other ulcers is not always easy, unless the history of the case decides it for us. Some writers advise the inoculation of the secretion of the ulcer upon the thigh of the patient, and say if this takes, it proves to be a soft chancre. The constitutional chancre may be known by the following characteristic: a hard papula or knot, which may be the size of a pea or bean, or even as large as an acorn. This induration consists of cells and granules, without any characteristic peculiarities, which are imbedded in the normal tissue.

Constitutional Syphilis.—Syphilis may sometimes cause nothing but a swelling of some of the lymphatic glands; but generally gives rise to quite a train of unmistakable symptoms. As soon as the primary ulcer heals, there may be a truce for several weeks before condylomata, exanthemata, or other signs of the syphilitic infection show themselves. Then, after these disappear, still another period of comparative good health may be enjoyed, when a second series of syphilitic symptoms appear. There are cases, however, where the periods of apparent health do not supervene, but where the secondary symptoms develop themselves whilst the recent chancre yet exists, although, as a rule, the secondary symptoms do not appear before the expiration of eight or ten weeks after the first infection, and about the same length of time elapses between the secondary and tertiary symptoms and aggravations. The order in which constitutional symptoms develop themselves is not always uniform. Generally indolent buboes appear, then condylomata, exanthemata, superficial ulcers of

the mucous membranes and iritis, all of which are considered as secondary affections. Later syphilitic lupus, periosteal nodes, induration of the subcutaneous, submucous and interstitial tissue, and affection of the muscles and inner organs set in, and are called tertiary affections. Sarcocoele seems to stand between these two stages, and there are cases in which destructive processes take place at first in the bones, before any constitutional symptoms are developed. This last is believed to be consequent upon the abuse of mercury. Febrile symptoms precede the outbreak of constitutional affections. Syphilitic cachexia seems to be produced by a mercurial treatment, the excessive drain attendant upon it, combined with ulcerations, thus gradually undermining the constitution, and retarding the nutritive functions in their normal operation.

The induration of the chancre may be quite thin, and if this be the case, it is called the superficial constitutional chancre. Again an excoriated surface may appear, elevated above its surroundings, secreting a very scanty, thin fluid; or, perhaps, nearly dry; with deep induration underneath. This is called the elevated constitutional chancre. It may be that the ulcer has not only a hard basis, but has raised, hard and callous edges; and appears deeper in the middle than at the edges, this form is known as Hunter's constitutional chancre. The stage of its incubation is from three to four weeks. If its secretion be inoculated upon the thigh of the patient, it does not take; thus showing that the virus is already in the whole system. It resembles small-pox virus in this particular. The indurated chancre differs also from the soft one, in that it is indolent, not painful, and generally appears alone, except in cases where the virus entered the system at different points at the same time. This chancre scarcely ever leaves a cicatrix when it heals, whilst the soft chancre always does. Infection with the virus of one form of chancre does not hinder the infection with another form, hence, we may have both the soft and the hard chancre in the same case. Coitus with an infected person is the common source of this disease. Clothes, utensils and sleeping apartments, may be soiled by the virus, which, if brought in direct contact with any denuded surface on the body, may produce syphilis. The constitutional poison is carried by the blood, and hence, a healthy child may become infected by vaccination, provided the vaccine matter be taken from an affected person. The first sign of healing in a soft chancre is cleansing of the dirty looking basis, and the springing up of new granulations upon its surface. By these the ulcer closes, and finally heals, leaving a well marked cicatrix. In healing, the indurated chancre gradually softens, just about the time that secondary symptoms appear. The hard chancre leaves behind a discolored spot, of a

brown, red or copper color, which remains on the body as long as the virus lurks in the system, and disappears with it.

TREATMENT.—In view of the double nature of the virus producing indurated, or hard chancre and soft chancre, a somewhat different treatment from that formerly given, is pointed out. Formerly before mercurial preparations were depended upon, we used remedies in each stage of the disease, according to the nature of its manifestation. That the bin-iodide of mercury, with iodide of potassium will do good service, no sound pathologist and experienced, unprejudiced therapist will deny, and that the indiscriminate use of mercurials, in massive doses, often produces many of the *so-called tertiary symptoms* is established by the best authorities, such as Headland and Ringer, of England, and many others in the United States. It is apparent, from the success with which it meets, that the compound iodide is the remedy in cases of indurated chancres, indolent buboes, indurated glands, and after the abuse of mercury. I use bin-iodide of merc., gr. 2, iodide of potassium, $\bar{3}$ 2, aqua pura, $\bar{5}$ 8; dose a teaspoonful three times a day. This will not salivate or injure the constitution. The mercurial is so surcharged with iodine (for which it has a most powerful affinity) that it does its work and is then completely removed from the system, with the iodine, and cannot leave any baneful effects. In cases of long standing after the abuse of mercury, when there are painless ulcers, with gray everted edges, which bleed easily; or where there are superficial ulcers, with zig-zag elevated edges, or ulcers with callous, hard edges, under which is an ichorous secretion; or where there are mucous, moist condylomata, or inflamed buboes, nitric acid, in doses of gtt. 1 to 3, three times a day, often manifests a curative power. Where the ulcers are round and deep, a strong solution of bi-chromate of potassium applied on lint will have a good effect, say gr. 5 to $\bar{5}$ 1 of water. If the case goes on to the tertiary form, and there are still deep ulcers with hard edges, or if in the secondary form there be hard buboes, pain in the bones, and falling out of the hair, iodide of potassium will do good service, and should be given in moderate doses. At the same time the tincture of *stillingia* and *corydalis*, in doses of gtt. 30 each, three or four times a day, will aid the iodide of potassium in its cure. In the primary stage, if the chancre assume a gangrenous aspect, Donovan's solution, in doses of gtt. 3 to 5, three times a day, should be given, and the chancre dressed with permanganate of potassium, gr. 5 to the $\bar{5}$ 1 of pure distilled water, or with an ointment of iodoform, gr. 10 to the $\bar{5}$ 1 of lard. Primary chancre should be touched with a pine stick first dipped into nitric acid, and after it dries, be dressed with dry calomel, which will heal it. *Stillingia* and iodide of potassium are the remedies for the tertiary form, especial-

ly for ulcers upon the palate; they should be given in moderate doses. In the tertiary form the chloride of gold, in doses of gr. $\frac{1}{50}$, three times a day, acts well, especially where there is sarcocele, osseous affections, lupus, ozena, or any other syphilitic inflammation. For condylomata I have found thuja an excellent remedy, and give gtt. 3 to 5, three times a day. I apply the tincture the same number of times daily to the parts affected with fig-warts, and it causes them to disappear under its external and internal use. For buboes, indolent or not, I have found iodoform one of the best applications. I melt gr. 5 to 10 in a $\frac{1}{2}$ of alcohol. Where the ulcers, in any stage, do not yield to the application of nitric acid I use a solution of chloride of zinc, gr. 2 to 3 to $\frac{1}{2}$ of water, and apply on lint. I never could accomplish much with sarsaparilla, the old remedy for this disease. I believe that the rhus venetta, if properly used, would prove to be a valuable remedy, especially in the tertiary form. Its dose is not more than gtt. $\frac{1}{3}$ to 1, as it is highly toxic. I have recently treated some cases of secondary and tertiary syphilis, after all the old remedies had failed, with the fluid extract and tincture of the berberis aquifolium, and succeeded admirably. This root has general tonic powers and very active cataleptic properties, both of which render it to be one of our best remedies in the tertiary form of syphilis, especially in cases of long standing very much reduced by a course of mercury. I have recently tried the caroba (fluid ex. of the leaves made by Parke, Davis & Co.) and find it to be a very active anti-syphilitic, especially in the tertiary form. I have also tried recently, in a case of some standing that had resisted the ordinary treatment, the cascara amarga, acitillo bark, and the caroba leaves (in the form of fluid ex.) all combined, and cured a case of the tertiary form in a very short time. The young man had had the usual mercurial course, and then the iodide of potassium in the tertiary stage, but all to no purpose. He came to me with extensive ulceration of the soft palate and mucous membrane of the mouth, both of which disappeared in a few weeks under the above treatment.

CHAPTER XIII.

DISEASES OF THE TESTES.

Hydrocele.—There is a serous membrane that encloses the testicles and epididymis, in the form of a closed sac, consisting, like the pleura, of two blades, the *tunica vaginalis propria* and the *tunica vaginalis reflexa*. This, like other serous tissues, is liable to exudation, and when that occurs, it constitutes hydrocele or dropsy of the scrotum. This may exist with general dropsy, in consequence of hydræmia, as found in old age, or it may be the result of tuberculosis or of other chronic affections; some mechanical irritation of an inflammatory nature may also give rise to it. It is sometimes found in young and healthy persons. Like peritonæal and pleuritic effusions also, it may become chronic, and the enlargement may thus be very great. In such cases, the scrotum appears smooth, tense and glistening; and the testicle being compressed, becomes atrophied, and sometimes gradually disappears entirely. In this case the scrotum becomes like a transparent bladder. Perhaps the undue irritation may cause enlargement of the testicle, which becomes indurated and forms cysts; and the exudation may coagulate, and become mixed with blood and pus globules. and cause adhesions. In ordinary cases of hydrocele, the testicle lies in the upper and posterior portion of the scrotum: the lower portion of the scrotum being filled with the fluid. If, however, previous inflammation has existed, adhesions may arise between the testicles and lower part of the scrotum, so that the testicles will be confined low down in the scrotum and the fluid gathered above. Hydrocele may be mistaken for scrotal hernia, but may be distinguished from it by carefully comparing the history of both of these affections. The neck of a hernia is traceable into the abdominal ring, while hydrocele only exists in the scrotum.

TREATMENT.—If this disease originate from an injury, such as a blow or fall, gtt. 1 to 2 of arnica, alternated with gtt. 2 of pulsatilla every three hours, often cures the disorder in the early stages. In sporadic cases the chloride of gold and sodium in doses of gr. 1-50 to 1-100 three times a day may be tried, while the diluted tincture of iodine is used locally. In old chronic cases an operation is required to effect a cure.

Orchitis.—The testicles themselves are the seat of the inflammation here. Orchitis may either follow external violence, or it may be an extension of the inflammatory process from other organs related to the testes, such as the prostate, the neck of the

bladder, or the urethra. Again, it may be the result of syphilis. There is a form that is caused by a metastasis in mumps. Orchitis may cause a serous exudation, especially when it attacks the epididymis or tunica vaginalis, and is then exceedingly like acute hydrocele. Again, orchitis may cause a fibrous, plastic exudation, which causes infiltration, swelling, and finally induration of the epididymis. It may also result in a serous hæmorrhagic exudation, in cases of acute specific orchitis. It may arise from a purulent exudation into the parenchyma of the testicle itself. Plastic exudation commonly results in chronic enlargement of the epididymis. Purulent exudation may be reabsorbed, or it may cause abscesses, which gradually break through the scrotum. Such abscesses are very hard to heal, and are apt to form fistulous openings. A case of orchitis very much resembles a case of incarcerated hernia of the scrotum. The pain is very severe, running along the spermatic cord, and causing nausea, vomiting and colicky pains. In such cases we must have the previous history of the case, and must know where the swelling commenced. In a case of orchitis, the swelling starts from below and goes upwards; but in scrotal hernia it comes from above and advances downwards. This is the most characteristic diagnostic symptom. I have known many physicians to make grave mistakes from the want of the previous history of the case.

TREATMENT.—At the outset, there is no remedy better than aconite, which may be given in small doses, repeated every ten or fifteen minutes, say gtt. 10 in four ounces of water, in doses of a teaspoonful every ten minutes. At the same time the scrotum should be bathed frequently in a strong infusion of mullein leaves. After the circulation is controlled by the aconite, gtt. 1 to 3 of pulsatilla should be given every two hours. This has a direct affinity for the testicles, and is a remedy for the advanced stages of orchitis. If the inflammation follow gonorrhœa, cannabis indica may be given in doses of gtt. 2 to 5 every three hours, alternated with gtt. 2 of elematis, or pulsatilla every two or three hours. If the skin is of a bright red color, gtt. 1 to 2 of belladonna should be administered every two or three hours. In chronic cases iodine is the best remedy, gtt. 1 to 2 three times a day.

Varicocele.—This affection consists of a varicose enlargement of the veins of the spermatic cord, and gives rise to a knotty swelling, which feels like the convolutions of earth-worms. It is much larger in the erect position than in the horizontal one. It usually forms on the left side, and its causes are rather obscure, as it seems to have no connection with varicoses of other parts. If it be slight it causes no great inconvenience, but otherwise it is very troublesome, causing an unpleasant dragging sensation, which extends down into the leg, especially when walking about.

It also gives rise to weakness, prostration, paleness and great dejection of spirits.

TREATMENT.—I have generally treated in the first stage with hamamelis gtt. 1 to 2, four times a day, and lint moistened with the tincture applied frequently to the parts. Fluoric acid (of the 3d dec. dilution, in doses of gtt. 1 every three hours), is recommended. Collinsonia is a valuable remedy, and it may be ordered in doses of gtt. 3 to 8, every two or three hours, alternated with hamamelis. I have always found this drug one of the most trustworthy, and with it, used as above directed, I have cured several recent cases. If the disease is of long standing, it will require the aid of surgery to cure it.

Impotence.—This disability for sexual embrace may be transient, or a total want of virile power may exist. Mere partial or transient impotence may be the result of a feeble state of the sexual organs, or arise from spermatorrhœa. There may be the power of erection of the penis at the proper time, or there may be total inability to erect. There may be relaxation in the midst of sexual embrace, and again in old masturbators, the semen is ejected immediately upon the introduction of the penis, and in some cases before the introduction. Total impotence has its origin in some functional debility of the genital organs, in which case erection is impossible. In some cases the testes are unusually small, atrophied, and soft, and the scrotum is relaxed and pendant. The penis, too, is small, shrivelled, and inclined to be colder than natural. In some cases the causes may lie in the spinal cord and brain. It is occasionally connected with diabetes, and I have known a great many cases that resulted from excessive venery in youth. A large majority occur from early excess in venery.

TREATMENT.—If impotence be the result of excessive indulgence, rest and nux vomica, alternated with the hypophosphites, will generally relieve it. As a tonic, helonias dioica has a good effect in debility of the sexual organs. Stillingsa also has a tonic effect upon these organs, and may be used with benefit in many cases. One of the best remedies for impotence, resulting from excessive indulgence in the sexual appetite, is damiana. I have given it in a great many instances with the best results, in doses of ʒ 1 to 2, three times a day. If there is any spinal deficiency, or lack of nervous tone, the hypophosphites alternated with nux vomica are required. A current of electricity run through the brain and spinal column thrice a day will doubtless also do much good. Diet may aid materially, if properly selected. I prescribe eggs, fish, oysters, meats, milk, and Graham bread. The patient should take moderate exercise in the open air, but not fatigue himself. He should also take a cold hip or shower bath every morning unless too great debility exists.

CHAPTER XIV.

DISEASES OF THE PROSTATE.

Prostatitis.—This is an inflammation of the prostate gland. Primary prostatitis is not of very frequent occurrence, but may occasionally follow injuries, blows, riding on horseback, or result from sudden suppression of perspiration, excesses in venery, and very frequently from masturbation. Secondary forms are of frequent occurrence, and generally consist in the extension of the inflammation from adjacent organs; as from urethritis, stone in the bladder, gout rheumatism, etc. One of the most frequent causes is gonorrhœa, and also the abuse of irritating medicines, as cubebs, balsam of copabia, turpentine, and strong injections.

SYMPTOMS.—The most noted symptoms are pain at the neck of the bladder, heat, pressure, throbbing in the perinæum and rectum, and frequent stitches from the perenæum into the pubic and lumbar regions, and down the thighs into the legs. Constant pains around the corona glandis. The urine flows slowly, drop by drop, a quantity often remaining in the bladder, and, consequently, micturition fails to give relief. In severe cases there is retention of urine. Defecation is also attended with pain. If the finger be introduced into the rectum the gland will be felt, as a hard substance. In favorable cases prostatitis may end in resolution; but badly treated cases may suppurate and form abscesses, which perforate, either into the rectum, bladder, or urethra, and discharge accordingly. Some cases assume a chronic form, and in consequence of exudation, infiltration, and deposition of tubercles and cysts of calcareous substances, produce a permanent enlargement of the prostate. This hypertrophy may reach the size of the fist and even be larger, or it may only affect single lobes of the glands, in which case it is not so large. Sometimes only the lateral lobes are enlarged causing irregularities in the direction of enclosed parts of the urethra, compressing it more or less in places, and so forming a kind of zig-zag passage. Again, the posterior part of the enlarged lobe presses into the bladder, and, in this way, from without, shuts the neck of the bladder inside, or gives it an oblique direction. Enlargement of the middle of the lobe or isthmus, which is the deformity most frequently found in old age, is apt to cause a partial or entire closing of the neck of the bladder, thus either obstructing the passage of the urine, or entirely preventing its passage. For this reason old men frequently have to use the catheter for years previous to their death. In such cases the prostatic fluid passes off at stool.

TREATMENT.—This affection is diagnosed simply by introducing the catheter into the urethra. If there is obstruction in the prostatic portion, and the patient experiences difficulty in urinating, or if there is dribbling of the urine, and frequent discharges of prostatic fluid when at stool, enlargement may then be suspected; and if the finger be introduced into the rectum; the enlarged gland can be felt. Where there is frequent desire to urinate: a dull pain in the region of the neck of the bladder; and spasmodic pains in the bladder after urinating; *pulsatilla* should be used in doses of gtt. 2 to 3, every two hours, until the symptoms are relieved. If this fail in two or three days, I find gtt. 10 to 15 of tincture of *digitalis*, given three times a day, or gtt. 3 to 5, every two hours, very useful, in alternation with the *pulsatilla*. Where there is a frequent discharge of the prostatic fluid, *ignatia amara*, in the form of tincture is one of our best remedies; the dose is gtt. 2 to 3. Prof. E. M. Hale recommends *barosma crenata chemaphila*, iodide of barium, *populin*, *senecio aureus* and *turnera aphrodisiaca* (this is a good remedy) in this disease, especially for hypertrophy of the gland. Where it follows gonorrhœa, *thuja occidentalis*, in doses of gtt. 2 to 5, is one of the best remedies we have. *Ergot*, in doses of gtt. 15 to 20 is also effective.

Onanism, Prostatorrhœa and Spermatorrhœa.—This dangerous, sinful and destructive habit is often contracted in early youth, and not infrequently, in childhood. Among the many instances which show the contagiousness of vice, none are more striking than this. The baneful influence of the bad example of other children at boarding schools often spreads this worst of vices among the younger members of the school, who are not aware of its real turpitude, or its destructiveness of mind and health. It may also be self-invented in early childhood by children whose virile powers are very active, and whose moral faculties are not well cultivated. It is, however, oftener learned from some vicious companion who has long been a victim of this unnatural, wicked and self-destroying vice, more ruinous to health and morals than any other in the dark catalogue of crimes. It is spreading stealthily, and almost without an effort to stay its onward progress, and bids well ere long to sap the strong foundations of religion and morality, unless its inundating tide be rolled back and forever stayed in subjection. It is becoming alarmingly prevalent everywhere, both in town and country, and reigns as the greatest scourge of our youth, as well as the grand cause of the deterioration of our species. The human family is on the increase all around us, generation after generation, and this evil should fill the mind of every christian philanthropist with gloomy forebodings as the future physical degeneracy approaches. This

damnable vice, the destroyer of mind, health and morals, is not confined to the male sex, but has also made its destructive inroads within the sacred precincts of female chastity. That universal thirst for fictitious reading in females is leading to this as well as to other vices of a degenerate age; and the voice of the minister of God, and the pen of the philanthropic physician should never cease until the progress of these twin vices is forever stayed. Some, I know, will sneer at the idea above put forth and will hurl upon me their anathemas; but truth and duty compel the revelation, although I incur the displeasure of many of the fair votaries of what is vulgarly called polite literature. The unreal, fanciful trash, that is flooding the country and being devoured by the young instead of solid science, is exerting a destructive influence upon the morals of our country, and its evil consequences should be depicted to the mind of the young of both sexes. The sensational sketches found on almost every centre table, breathing love and passion in every line, are cultivating a vitiated taste and are inflaming the young mind with an uncontrollable passion for the sexual appetites. The powerful impressions made upon the mind by the trashy and abominable books that are flooding the country are impressed upon the nervous system, and through it upon the sexual appetites, as the legitimate sequence of cause and effect. However early this detestable habit may be contracted, the victims but too frequently succeed in concealing it from parents and others interested in their welfare until its destructive effects tell upon their physical system in a peculiarly pallid countenance, sunken eyes and downcast and gloomy look. Or perchance it manifests its ruinous influence upon the mind by an impetuous irascibility that renders them unfit for the companionship of others. It may also enfeeble the intellectual faculties by degrees, until it produces the lowest state of imbecility, or even raving and incurable insanity. But, before it ends in insanity, the nervous system and physical powers become shattered, the digestive and assimilative organs prostrated, the patient grows feeble and anæmic, the joints are weakened and there is not unfrequently spinal curvature. In females it gives rise to chlorosis and chorea, and in either sex there is often epilepsy, neuralgia, rheumatism, nervous headache, chilliness of the body, especially of the extremities, and finally inability for intellectual or physical pursuits supervenes. If the victim has fallen a prey to this destructive vice in early years, growth will be stunted and there will be enlargement of the lymphatic glands. Not unfrequently there may be tubercular deposits in the lungs or other viscera; or perhaps scrofula will be developed. Many cases of this disease and of consumption are attributable to onanism. It is now a well attested fact that these diseases have their foundation in an

enfeebled condition of the molecular vital forces, which, of course, soon deteriorates the blood and deprives it of its wonted pabulum—the blastoderm of healthy tissue, and consequently an unhealthy tissue is formed, or one of such low vitality that it is incapable of sustaining organic life, and tubercle is the result. When such a result is about to take place there will be contraction of the chest, rounding of the shoulders, great weakness of the joints, a sunken appearance of the eyes, which lose their lustre, and the countenance becomes pale and the patient shy. A dark circle forms around the eyes, the vision often becoming impaired, and not unfrequently destroyed; the hair falls out more or less; there are pains in the back and limbs, and an aversion to sitting still; and headache, with often an inability to sleep soundly, from frightful or lascivious dreams. Other symptoms then supervene, such as great loss of color, pallor and softness of the gums, and fœtidness of the breath. The countenance becomes dusky and very much dejected, and sometimes there are sores on the face. In females, leucorrhœa, scanty or painful menstruation, spinal irritation and hysteria take place. All the functions become disordered, and special forms of neuroses follow, as epilepsy, palpitation and sometimes disease of the heart, melancholia, mental wretchedness, palsy, enlargement of the spermatic chords, testes, and prostrate glands in males, urinary diseases, consumption and insanity. The digestive and assimilative organs are very much impaired at this stage, and constipation is persistent. The sexual organs themselves now become greatly disordered, the frequent unnatural excitement that they have been subjected to causing an increased secretion in men or boys, with inflammation and hypertrophy of the glands, irritation of the vesiculæ seminales, and finally atrophy of the testes, followed by involuntary emissions, particularly at night. The patient, in spite of his fears, that are now awakened by his alarming symptoms, cannot control his habit. If he resolves to reform, he either masturbates in his sleep or has lascivious dreams with emissions of semen in spite of his strongest efforts to refrain.

Habit has now asserted her dominion over him, bound his moral faculties in her own iron fetters, and he is the unwilling slave of the deadliest and most detestable vice that ever shocked the sensibility of humanity. This sinful and health-destroying habit is often contracted in much earlier years than the non-professional suppose it to be. At school you may see boys that were once sprightly and buoyant, becoming sad, thin, irritable and bashful; their features too, assume a haggard aspect, their eyes become sunken, their countenances wear a cadaverous expression, and their countenances wear a cadaverous expression, and their downcast faces evince consciousness of their guilt. Though some children are

naturally timid, yet a large majority of them are made so by self pollution. Such boys may be known by having cold, moist hands, short, unrefreshing sleep, marasmus, nervousness, spasmodic contractions, and convulsive affections of the muscles. There are yet other visible signs of this destroyer of youth. When the little culprit, who formerly evinced considerable intelligence, and possessed a retentive memory, begins to show greater difficulty in acquiring his lessons than before, the cause may be found in the formation of this detestable habit. If it is not now abandoned at this stage, the victim's health soon fails, and he too soon finds out the full extent of the ills of the workers of iniquity. If this vice be indulged in only to a limited extent before puberty, it may be suppressed by timely instruction; by instilling into the young mind virtuous principles, properly portraying the hideousness of the vice, and depicting its evil consequences. If, however, it pass that age, and becomes confirmed, it is exceedingly hard ever to reform the victim. I have often been consulted by young men, in whose careworn countenances, and pallid faces, I traced the visible marks of this ruinous practice. Upon questioning them they would reluctantly confess that they had long been guilty, but said that they now craved, above all things, to wrest themselves from this deadly habit, but had failed to accomplish this object. What a miserable state? A young man came to me several years ago, frankly confessing his guilt, and asked me if I could do anything for him. He said that he had formed the habit of masturbation in early youth, before he was old enough to know the evil of the vice, and when he arrived at more mature years, and his moral feelings were shocked at such a crime, he tried every expedient to break himself of the habit, but all his efforts had proved in vain. He told me that while when awake, he refrained, but when asleep, he either had lascivious dreams with emissions, or he masturbated in his sleep. His health was gone, and his mind so fast failing, that he had stopped his education, and was racked with neuralgia and rheumatism, and so nervous that he could not well confine himself to anything. He was gloomy, petulant, indisposed for society, refrained from company, and sat for hours at a time in melancholy musing, brooding over his sad, and to him hopeless condition. He excited my keenest sympathy, and I told him, that though his condition was a deplorable one, there was yet some hope of his final recovery, if he would take my advice, and abide by my prescription. This he readily agreed to do, and I had the very great satisfaction of reforming him, and restoring his health, and he is now married and a happy father and husband.

I was visited some years ago by a young man from an adjoining State, in whose countenance were the unmistakable evidences of long masturbation, although he did not confess it, but consulted

me in regard to various diseases. He had an affection of the seminal ducts and prostate gland, irritability of the bladder, and dyspepsia in its most aggravated form. All these troubles I could readily trace to masturbation. To be certain in my opinion I examined his urine microscopically, and there detected his guilt. I treated him, and soon restored him to his wonted vigor. I was recently called on by a young man to prescribe for his brother, who he said was very dyspeptic and fast losing his mind. I questioned him very minutely, but could not arrive at the cause, and so told him to bring his brother to see me. When he came, I at once saw the well recognized expression of a confirmed masturbator. I at once plainly told him the cause of all his mental aberrations and bodily suffering. He frankly confessed it, and said: "I wish I could have known the evil of this vice in time, and then I would have escaped its ill consequences." He strongly pressed me to try and aid him in breaking himself of the habit. I put him under both medical and hygienic treatment, and had the pleasure of seeing him restored to health in mind and body. This is only one out of hundreds of similar cases.

This evil habit could be counteracted if timely care were taken to warn the young in their tender years by pointing out the protean evils resulting from it. Parents should kindly, yet solemnly, enjoin upon their children to refrain from this most baneful and detestable vice. They should plainly tell them that their future health and happiness are at stake, and then portray the many physical ills and mental woes that this habit always visits upon the unhappy subjects in this life, and the ruinous consequences that it will inevitably entail in the awaiting future. Their young minds can and should be inspired with an utter detestation of this damnable and most loathsome practice. As soon as they can read let them have some treatise that points out the evils, mental and physical, of this violation of the laws of God and of life. The young mind is easily impressed with good as well as with evil; and while the vicious make masterly efforts to deprave the rising generation, let the Christian philanthropist be equally vigilant in instilling the principles of virtue and piety into the minds of the young. Why have not appropriate works upon this subject been disseminated long ere this? Why has not the mental anguish, experienced in this violation of the laws of chastity, been pointed out to the young long since? It is true, that a few treatises upon the subject have been written, but they have been so large, and, consequently, so costly, that they have not reached the general reader. Let the veil be removed, and let this dark crime appear to the young mind in all its frightful hideousness, and the deadly blight of virtue and health will be much lessened. Let the young know that the sexual desire, only imparted to man

to "multiply and replenish the earth," must be restricted by the sternest laws of virtue, and that those who violate these laws by illicit intercourse of the sexes, will be visited by the severest penalty; much more so, those who violate the same laws by self-pollution. Many victims of onanism drag out a miserable existence for years, and then die a painful death, rather than disclose the cause of their suffering. Yet more die within the walls of an asylum for the insane, and the cause of their insanity remains unknown, save by the attending physician. This should not be the case, but the crime should be exposed, even if the name of the criminal rest forever in profound concealment. The medical philanthropist should take the unhappy victims kindly by the hand, with all the soothing sympathetic language of compassion, and point out to them the awful consequences of this violation of virtue. They should plainly tell those that are gifted by natural endowment, and so fitted to become the pride and glory of their parents, and an ornament to society, that ere long this vice will produce such moral and physical degradation as will wring the hearts of parents and friends, and that with the last remnant of mind, will haunt them daily with the thought that their hopeless wretchedness is the inevitable result of their own misconduct. There are such tormenting horrors in the mind of the victims of this deplorable vice, that it often produces a disposition to commit suicide, especially in those of a melancholic disposition. Many of the suicidal cases that occur in colleges, and are generally attributed to study, are the result of onanism. Nor are imbecility, insanity and suicide the only grave sequences of this vice of youth, but phthisis pulmonalis, with all its justly dreaded horrors, is a very frequent result of this great drain, on the electrical, or life force. It is estimated, by reliable authority, that 18 per cent. of consumptives die from this practice.

Perhaps there is no disease, that does not reside directly in the nervous system itself, that so quickly enfeebles all the vital powers, or sooner leaves its sad impress of imbecility upon the mind, and but few persons have any just conception of the enfeebling nature of this vice, until painful experience has taught them its destructive tendencies. Very few men in the medical profession know why masturbation is so much more destructive of health than excessive venery. It is because the electricity of the person addicted to it, is parted with, and no compensation received, as is the case to some extent, in ordinary sexual intercourse. Self pollution is soon followed by spermatorrhœa, another destructive drain upon the molecular life forces. This is an involuntary flow of sperm, and recurs so frequently, when once debility of the seminal system is superinduced, as to destroy the health of body and mind in a

short time, especially, where the quantity emitted is large. But few of the victims of this vice ever listen to the note of alarm at an early period; they remain unmoved until a train of physical and mental evils of dreadful import come upon them. Spermatorrhœa occurs generally in the night, when the mental and moral faculties are wrapped in profound sleep. The impression is transmitted from the excited or diseased vesiculæ seminales, through the recurrent system of nerves to the brain, and the discharge is in accordance with a physiological law, converted into a pathological condition, which demands moral and medical treatment. The remarkable curse of Onan,—the first man that we read of in the early ages of the world, who dared to waste his seminal power upon the ground, should be pointed out to the young. God was so displeased with the wicked inventor of this unnatural crime that he instantly slew him; see Genesis 38th chapter, 9th and 10th verses. Yet even now, in almost every village, hamlet and city, and in every section of our land we may see a partial verification of the same anathema of Jehovah, not in the immediate destruction of the wicked offenders, but as that law is unchangeable, and remains in full force through all generations, he, who violates it, whether ignorantly or knowingly, must sooner or later, suffer the fatal consequences. If immediate death be not inflicted, as it was in the case of Onan, premature decay, lingering diseases, spermatorrhœa, enlargement of the prostate gland and testes, loss of muscular power, consumption, impotency, dyspepsia, and a long train of maladies, at sight of which, humanity shudders, religion weeps, philanthropy grows pale, and angels pity, prey upon health and life.

TREATMENT.—Under this head may be included nocturnal emissions as well as real spermatorrhœa, both of which have their origin in excessive sensibility of the testes, spermatic cords, seminal vesicles, ejaculatory ducts and prostate gland. The first thing to be done is to relieve the cause. For the great irritability of the seminal organs, the drug gelseminum, in the form of tincture, may be given in doses of gtt. 15 to 25, three or four times a day, until it allays excitement. Should this fail, in a few days it may be alternated with small doses of tincture of nuphar, two or three drops *ter die*. Where there is nervous prostration, and pain and tenderness in the testes, diluted phosphoric acid, in small doses, may be given with good effect. Staphisagria has with me proved a valuable remedy in many cases. I use the tincture in small doses of gtt. 1 to 2. In some cases of nocturnal emissions the bromide of camphor, in small doses acts admirably. I have used cannabis indica, in doses of gtt. 5, three times a day, with good results. For many of the evil results, such as impotency and great relaxation of the seminal organs, I have found turnera aphrodisiaca the best remedy, as prepared by Parke, Davis & Co., Detroit, Mich.

CHAPTER XV.

DISEASES OF THE FEMALE GENERATIVE ORGANS.

Ovaritis.—Inflammation of the ovaries has its seat in the Graafian follicles, in the parenchyma, or in the peritoneal covering of the ovary. When seated in the Graafian follicles they are enlarged and filled with a bloody fluid and their surfaces are injected. If, in the parenchyma, we find the areolar tissue of the ovary hyperæmic, œdematous and infiltrated, (this form terminates in suppuration in rare cases, much oftener in induration and shrivelling of the ovary.) Inflammation of the peritoneal covering is either a primary affection, or it is a continuation of a parenchymatous inflammation. In both cases we find the ovary covered, as in all inflammations of serous membranes, with a fibrinous exudation, which may cause subsequent adhesions between the ovaries and the Fallopian tubes, or the broad ligaments of the uterus.

CAUSES.—It may originate from cold, getting wet at the menstrual period, sexual intercourse during the menstrual period, onanism, or it may be the result of inflammatory processes of adjacent organs, as of the peritonæum or uterus. It is most frequent in females who have much rough work to do, such as washing, scrubbing, etc. Prostitutes and lewd women are also very subject to this disease, and women who have once had an attack are more subject to it again. It very rarely attacks both the ovaries at the same time.

SYMPTOMS.—If the parenchyma alone is the seat of the inflammation, there will be violent, sharp, colicky pains, vomiting and fever. If the Graafian follicles should become ruptured, there will be some fever. If the ovary is pressed upon, by introducing the finger into the rectum, it will be found painful. If the inflammation spreads to the adjoining organs, there will be pain in urinating, and in the evacuation of the bowels, and there may also be a utero-vaginal blennorrhœa, or a numbness of the affected side. The inflammation may subside in twelve or twenty-four hours, or it may last eight or ten days. It may become chronic, if not well treated, and form serous cysts, and cause induration of the ovary, or it may terminate in suppuration.

TREATMENT.—Aconite is the best remedy in this disease; it may be given in doses of gtt. 1 every hour, until the pulse is controlled, and then every two hours, until the force of the inflammation subsides. If there remain induration, tensive pain, restlessness, stich-

like pain from the ovary down to the thigh, with anasarca, the tincture of arsenic should be given in doses of gtt. 1 to 2, every three hours. If there is induration, with lancinating pains in the ovary, or burning, sore, aching pains, conium, in drop doses, three times a day, may aid the cure. If there are hysterical symptoms with rheumatism, and suppressed, painful or profuse menstruation, gtt. 10 to 15 of *cimicifuga*, given every three hours, in alternation with such other remedies as may be indicated, will give good results. If there be chronic congestion, with leucorrhœa, dropsy, or induration of the ovary and pain in it, I use iodine in doses of gtt. 2 to 5 of the compound tincture, three or four times a day. If, with the induration, there is a dragging pain extending down into the thighs, *bryonia*, in doses of gtt. 2, three times a day, should alternate the iodine. If rheumatic stitches are felt in the side and in the ovary just before and during menstruation, which are increased by changes of weather, gtt. $\frac{1}{2}$ to 1 of *rhus tox.* should be given three times a day in alternation with *staphisagria*. If the pain is much increased during the menstrual flow, the tincture of *thuja occidentalis*, in doses of gtt. 1 to 2, should be prescribed daily until relief is afforded. If there is an intermittent pain, shooting down into the legs, *ustilago* is the proper remedy.

Ovarian Dropsy.—It is frequently the case that the Graafian follicles become degenerated, and so distended with a clear, yellowish serous, or thick, limpid fluid, as to attain to the size of a child's head or even larger. There may be one, or several of such cysts, and the fluid be as above described, or it may be thick, and jelly-like in consistency. I tapped a case some years ago, that was of this character, and I had to make an incision through the *linea-alba* before the gelatinous mass would pass off. This jelly-like fluid was in strata of various colors; some of it was yellowish, and some red, and mixed with bloody serum in large quantities. The alveolar degeneration of the ovary destroys all the original structure, its whole substance becoming transformed into larger and smaller cavities, which are separated by a fine tissue. By the extension of some of these, the ovary assumes an uneven shape. The contents of the cysts are frequently a yellowish, tough substance, resembling syrup or honey, or sometimes they are filled with a thin fluid. This degeneration of the ovaries is frequently associated with cancer of these organs. Some rare cases have occurred under my notice, where, instead of fluid, these cysts contained hair, teeth and bones, and their interior walls presented a structure similar to cutis, having an epidermis with sudorific and sebaceous glands. Such cysts are called dermoid, and vary in size from that of the fist to that of an apple or an orange.

SYMPTOMS.—The symptoms of ovarian dropsy do not differ very much from those of the first stage of ovaritis, but when the cysts

attain considerable size they press upon the bladder and rectum, causing difficult urination and defecation, and upon the posterior wall of the lesser pelvis, causing pain in the small of the back, or pain and numbness in the lower limbs. When they press upon the veins in the pelvis, they cause œdematous or varicose swellings of the lower limbs. Sometimes the mammæ sympathize with the diseased ovaries, and in consequence, become enlarged and tender. The stomach may also sympathize with the ovaries and cause vomiting, thus simulating the commencement of pregnancy. As the cysts enlarge, they rise out of the pelvic cavity, and their pressure upon the pelvic organs ceases. When, however, they attain a very great size, they press against the diaphragm and compress the abdominal organs. This pressure upon the abdominal organs may cause shortness of breath, vomiting, palpitation of the heart, catarrh, disturbed secretion of the urine, deficient nutrition, anæmia and hydræmia, which may terminate in general marasmus. The size of these ovarian cysts increases at the menstrual period, and decreases after menstruation is over. If they should burst their contents are discharged in the abdominal cavity, and consequently produce peritonitis. or in some rare cases, in consequence of previously formed adhesions and inflammatory processes the fluid may gain entrance into some other abdominal organ, and be discharged thereby.

DIAGNOSIS.—While the cysts remain in the pelvis, examination per vaginam or rectum, will reveal a well defined swelling moving the uterus out of its place. As it rises in the abdomen, it appears well defined over the horizontal ramus of the pelvic bones; and later, it may rise higher, and appear as a large tumor, yielding more or less sense of fluctuation. Percussion yields a dull, flat sound, where the tumor impinges on the parietal walls; the percussion sound being dullest where the swelling is most prominent, thus differing from ascites, which is just the reverse of the above.

TREATMENT.—This disease is generally overlooked by the sufferer until the enlargement is too great to be overcome. If there are sharp, stinging pains, with constipation and scanty urine, pale skin, pain in the back, œdema and numbness of the lower limbs, the treatment should commence by giving gtt. 3 to 5 of tinct. of apis mel., every three hours. If there is acrid leucorrhœa which corrodes the parts, and a sensation of pressing down towards the genitals, and constipation, I use the iodide of arsenic in doses of gr. 1-50 to 1-30 every three hours, well diluted with water, else it will corrode the stomach. I generally use the 1st dec. trit. adding one or two grains to $\frac{3}{4}$ of water, and giving a teaspoonful of this mixture. If there is a burning pain in the ovary, and scalding of the urine, the tincture of cantharides, in doses of gtt. 1 to 2 every three hours, should alternate with the other indicated

remedies. If the affection is accompanied with general dropsy, great debility, urgent thirst and a burning pain in the ovaries, tincture of arsenic, in doses of gtt. 1 to 3, may be given every four hours, largely diluted with water. If the cysts have become very large, all that can be done with medicines is to improve the general health, and leave the rest to operative surgery.

Leucorrhœa.—Leucorrhœa may be produced by all disorders that cause stagnation of the proper circulation of the blood, as heart and lung diseases, chronic constipation, direct irritations, excesses, masturbation, pessaries (these are a very fruitful source of leucorrhœa), general debility, typhus, cholera, small pox and other infectious diseases such as chlorosis, scrofulosis and tuberculosis. Excessive child bearing and too long continued lactation, may also give rise to it.

PATHOLOGY.—This disease consists of hyperæmia of the mucous membrane, characterized by swelling, dryness, in the early stage, and afterwards increased secretion of mucus. As it becomes chronic, the mucous tissue becomes thickened and hypertrophied, and its surface is frequently found studded with small excrescences. This issue is of a slate color, and the secretion finally becomes more or less purulent. The vaginal follicles become swollen on account of the obstruction in the excretory ducts, whilst their secretion is going on inside, and little round bodies of the size of hemp seed form, which are called *ovula Nabothi*. In some advanced stages of long standing there are diffuse catarrhal erosions for the most part on the posterior lip of the os uteri, or follicular ulcers which are caused by the bursting of the *ovula Nabothi*. Occasionally granulating ulcers form.

SYMPTOMS.—A drawing pain in the small of the back and in the inguinal region, a feeling of fulness and heaviness of the pelvis, together with dysuria and tenesmus, characterize this disease. Pressure over the uterus gives pain, and in acute cases there is more or less fever. In some three to four days the characteristic leucorrhœal discharge begins, which at first is transparent and sticky, staining the linen a grayish color. As the disease advances this discharge becomes opaque and more or less purulent. In chronic cases it sometimes commences more gradually, and the discharge may be scanty at first. If the discharge is corrosive it is generally evidence that it is from the vagina. The longer this disease exists, the more the mucous lining is changed in its character, which changes influence the menses, causing either excess, pain or deficiency in the discharge. If conception takes place there is great liability to miscarriage. Chronic catarrh may be endured a long time, but it finally produces debility, relaxation, anæmia and hydræmia. It leads also to hyperæsthesia, neurgalia and spasmodic complaints, such as hysteria. Again it may lead

to metritis, displacements of the uterus, closure of the cervical canal, and sterility.

TREATMENT.—Where there is great debility, defective nutrition and anæmia, it is advisable to commence the treatment with aletris farinosa, one of our best tonics for females. It may be given in doses of gtt. 10 to 15 three times a day. If there is great pain in the back and hips, constipation and piles, aesculum hippocastanum may be given in alternation with the aletris farinoso, in doses of gtt. 5 to 6, three or four times a day. If there is great distension of the abdomen, and the discharge is like the white of an egg, muriate of ammonium in doses of gtt. 2, three times a day will aid materially in the cure. If the discharge becomes acrid and corroding and passes off when the patient stands on her feet, tincture of arsenic, in doses of gtt. 2 to 3, will have a happy effect upon the disease. If the discharge be acrid and fœtid and is attended by ulceration of the os uteri and vagina, baptisia, in doses of gtt. 1 to 3, should be ordered three times a day, and the vagina syringed out with a solution of permanganate of potassium, gr. 5 to the ℥i of water at first (to be gradually reduced in strength to gr. 2.) If there is pruritus accompanying the leucorrhœa, gtt. 10 or 15 of tincture of collinsonia should be administered every three hours. Pulsatilla is also an invaluable remedy, in doses of gtt. 3 to 5, three times a day. The fluid extract of hydrastis canadensis applied locally is a valuable remedy in vaginal leucorrhœa, and the sulphate of hydrastin, in a saturated solution in water and glycerine, is also a good topical application. Cimicifuga is effective in uterine leucorrhœa, and may be given in doses of gtt. 20 three times a day. For vaginal leucorrhœa, with severe catarrhal inflammation of the mucous membrane, tinct. of yellow marigold, with water and glycerine in equal parts, is valuable for external use. I usually apply it on lint or a soft sponge, renewing the application twice or thrice a day in grave cases. For mucopurulent leucorrhœa, the balsam of Peru in aqueous solution acts very well when locally applied. Where the discharge is very acrid and fœtid, I use carbolic acid as a wash, diluted in water, 1 part to 10 or 20 parts of water, according to the sensibility of the parts. Carbolic acid ℥2, glycerine ℥1, rose water ℥7, is also a good combination for this purpose. A wash of a saturated solution of boracic acid is also advisable in vaginal leucorrhœa. A strong solution of alum is an invaluable application where the discharge is thin and very profuse. In leucorrhœa of long standing, with inflammation and ulceration, sepia * and pulsatilla are the proper remedies.

Acute Parenchymatous Metritis.—In this disease, the uterus

* Sepia is made from Cuttle fish, and must be used carefully.

is hyperæmic, œdematous, enlarged, and presents a dark, red color, often containing exudates of blood, or bloody serum. In the chronic form, the redness is not so apparent, as from the exuberant growth of the interstitial tissue the small blood vessels become compressed, so that only a few of the veins become varicosed on account of the obstruction to the circulation in the organ. The substance of the uterus itself appears pale, dry and tense, and very much thickened. This condition of the parts, either in acute or chronic metritis, is always more or less complicated with inflammation of the mucous coat of the uterus, catarrh of the uterus, or an inflammation of the peritoneal coat of the organ, as in puerperal peritonitis occurring after delivery.

CAUSES.—The causes are the same as those which produce uterine catarrh, except in the case of puerperal peritonitis, which follows delivery, abortion, or miscarriage.

SYMPTOMS.—This form of inflammation, like most others, sets in with a chill, followed by fever and pain in the back, etc. There is generally pain in the inguinal region; pressure in the pelvis; and great soreness over the uterus. If it takes place during the menstrual flow, this suddenly ceases, or may burst forth as metro-rhagia. Metritis is almost always complicated with uterine catarrh, and consequently, is attended with similar characteristic discharges.

PROGNOSIS.—In favorable cases the disease may terminate in eight or ten days. Puerperal metritis, however, is a graver form of the disease, and often proves fatal, especially if not well treated. The most frequent causes of this form of metritis are operative manipulations during parturition, mental excitement or depression during the puerperal state, improper diet, taking cold, and, doubtless, there is at times a condition of the atmosphere favorable to it. The epidemic form is usually called *puerperal fever*, which is a peculiar dissolution of the blood similar to, but not identical with, that of typhus fever. This disease generally commences after delivery, while the uterus is still in a state of hyperæmia. It also sets in with a chill, followed by a high fever, extreme tenderness over the uterus, great thirst, nausea, and often vomiting, suppression of the lochial discharge and a great tendency to putrescence. This last symptom is evinced by a very offensive odor about the patient and her bed. The disease is often complicated with *phlegmasia alba dolens*, *milk leg*, which is a metastatic inflammation of one or more of the large veins of the thigh, causing a shining, white and very painful swelling of the whole limb. The chronic form of metritis is characterized by a heavy feeling often mistaken for prolapse of the uterus. At the outset the menses are generally very profuse; but later, as the exuberant interstitial tissue compresses the blood-vessels of the uterus, menstrual discharge becomes

scanty or perhaps ceases, and leucorrhœa takes the place of the menses.

TREATMENT.—In the acute form of metritis, I find aconite invaluable, in doses of from gtt. $\frac{1}{2}$ to 1, every half hour or hour, according to the severity of the disease. Belladonna may be given in doses of gtt. 3, every four hours in alternation with the aconite. Both of these remedies oppose the inflammatory process, by their direct influence over the capillary, and general circulation. They are both especially applicable in the puerperal form of inflammation of the uterus and its appendages. If there is constant nausea and vomiting, small doses of ipecacuanha should be given, say gtt. 1 to 2 of the tincture of the fresh root, every half hour until the symptom is relieved. If the fever runs very high in puerperal metritis, and the pulse is full, strong and quick, veratrum viride, in doses of gtt. 2, every two or three hours, has acted well with me in many cases. If there is great soreness over the uterus, I usually apply a cloth wet in spirits of turpentine over the spot. In cases of an adynamic type, where there is great prostration, a bruised feeling all over, fœtid odor from the body and excretions, and a dry red tongue, or a brown parched one, baptisia in doses of gtt. 1 to 5, may be given every two hours, until this condition is corrected. The above is the proper treatment for the acute form of metritis, the chronic form requiring other remedies. In chronic metritis, where there is constant desire to urinate and constipation, nux vomica, often does much good in doses of gtt. $\frac{1}{2}$ to 1 every 2 hours. If the disease comes on in a subacute form, from getting the feet wet during the menstrual period, or just after the confinement, pulsatilla, in doses of gtt. 2 to 3, every two or three hours, will aid in the cure. If, instead of obstruction of the menses, there is hæmorrhage, sabina may be prescribed in doses of gtt. 1 to 2 of the tincture, every three hours, with good effect. If the disease is attended with putrescence of the uterus, and ulceration of the os uteri, gtt. 1 to 2 of the tincture of secale cornutum should be administered every two hours, until this state is corrected. Should there be constant tenesmus in the bladder, gtt. 1 to 2 of tincture of cantharides may be given every hour, until the symptom is relieved.

Chronic Parenchymatous Metritis.—This is *areolar hyperlasia* of the uterus, and is one of the most intractable diseases of females. This complaint seems to consist in a diffuse growth of connective tissue, constituting induration. The whole uterine connective tissue sometimes proliferates, usually without accompanying increase of muscular substance, or if this does occur, the connective tissue predominates. This condition is generally called hypertrophy of the uterus, or enlargement of the cervix, by some authors, subinvolution of the uterus, and by others, chronic enlargement of the uterus and cervix.

CAUSES.—Any impairment of the vital forces may tend to the development of this disease, and a tuberculous tendency of constitution may also have this result. Too frequent parturitions, prolonged nervous depressions, attacks of puerperal inflammation, displacement of the uterus, endometritis, cardiac disease and neoplasms, and excessive sexual intercourse may also cause it.

SYMPTOMS.—Where the cervix alone is involved, there is pain in the back and loins, pressure on the bladder and rectum, irregular menstruation, nervous disorder, pain with the sexual embrace, dyspepsia and leucorrhœa. If the body of the uterus is affected, there will be a dull, heavy, dragging pain in the pelvis, which is increased by motion. Defecation and sexual intercourse are also attended with more or less pain, and the monthly courses are preceded by a dull pain in the back and uterus. There is apt also to be pain in the mammæ just before and during the menstrual flow; the areolæ also around the nipple become darker. In some cases there is nausea and vomiting, and the pressure in the rectum frequently results in hæmorrhoids. The uterus is perceptibly enlarged, and is tender to the touch.

TREATMENT.—Local depletion, either with leeches or the scarificator may do good in some cases. I have depleted with tampons of sponge, saturated with glycerine, applied all night, and then renewed in the morning. This treatment should be continued for several days, and is of special utility in cases of enlarged cervix uteri. *Phytolacca* in small doses, of gtt. 5 every three hours, will aid in lessening the enlargement. *Sepia* has done good service for me in several cases; given in doses of gtt. 1 to 2 three times a day. After using the glycerine a few days, I administer gtt. 10 of Lugol's solution to 5 2 or 3 of glycerine and water. This may be alternated with a solution of the tincture of *polymnia uvedalia*, gtt. 10 to 20 of which may be taken internally, three times a day. It may be applied by adding equal quantities of pure glycerine, or glycerine and water.

Puerperal Fever.—This is a most serious disease in females. Its frequent causes are, operative manipulations during parturition; great mental excitements or depressions during the puerperal state; faulty diet, and taking of cold, etc., during that period. There is a very grave form of puerperal fever, similar to typhus fever, which consists in a dissolution of the blood. This form of puerperal fever always commences in the first days of the puerperal state, even before the uterus regains its normal position and size. It usually sets in with chills, followed by high fever, great tenderness over the abdomen, urgent thirst, vomiting, suppression of the lochial discharge, and a very marked tendency to putrescence and decomposition. *Phlegmasia alba dolens*, or *milk leg*, is a frequent complication of this form of fever. This seems to be a metastatic

inflammation of one or several large veins of the thigh, causing a white, shining, very painful swelling of the whole limb, together with great enlargement of the diseased vein. Parenchymatous metritis, acute and chronic, often occurs, in which there is an hyperæmic, œdematous enlargement of the substance of the uterus. If this state be attended with a great tendency to putrescence and decomposition in the acute form, it is apt to prove in most cases, intractable to all kinds of treatment.

TREATMENT.—If there is a great tendency to putrescence, antiseptics should be given at the outset, alternated with arterial sedatives. I have found the tincture of *veratrum viride*, in doses of gtt. 2 or 3 every two hours, until the rapidity of the pulse is moderated, then in smaller doses, alternated with *aconite*, in doses of gtt. 1 every two hours, to answer well in most cases. If there is an offensive odor about the patient, a solution of gtt. 2 to 5 of permanganate of potassium to the ounce of water, used with a syringe, and thrown up against the os-uteri every two or three hours is effective. I also give from gtt. 3 to 5 of the tinct. of *baptisia* every two hours. If the inflammation is the result of injury from manipulations during parturition, I then administer gtt. 1 of tincture of *arnica* four times a day. If there is headache or delirium I use gtt. 3 to 5 of tincture of *belladonna* three times a day. If there is partial paralysis of the lower limbs, restlessness, dry tongue with red edges, red rash on the breast, and any other marked typhoid symptoms, *rhustoxicodendron* in doses of gtt. 1 to 2 every three hours, will be found to act well. If there is constipation, and great distention of the abdomen, headache and thirst, I give gtt. 2 to 3 of *bryonia* every two hours. If there is a very great tendency to gangrene, gtt. 5 of turpentine every hour or two act admirably.

Anteversion of the Womb.—Anteversion consists in a displacement, in which the fundus of the uterus falls forward and leans upon the bladder and pubis. This condition may be the result of hypertrophy of the anterior wall of the uterus, of peritoneal exudates or tumors within the abdominal cavity pressing it forward, and of muscular efforts.

SYMPTOMS.—There are no very distinct symptoms, except pressure upon the bladder and rectum. Upon introducing the index finger into the vagina, the portio-vaginalis will be felt inclined backwards.

Retroversion of the Womb.—Here the fundus of the womb inclines back towards the os sacrum, or is even pressed down beneath its promontory. This condition may exist in the early stage of pregnancy, and may be produced by the same abdominal conditions that cause anteversion. Its symptoms are pressure upon the neck of the bladder, sometimes causing great difficulty

in passing the urine, and pressure on the rectum, causing constipation, and pain in defecation. Upon examination the neck of the uterus will be felt high up, towards the pubic arch, in a position just the opposite of that of anteversion. The examination should always be made while the patient is in the erect position, as reclining changes the position of the misplaced uterus.

Prolapse of the Womb.—The uterus may descend, more or less, into the pelvis; from a slight bearing down upon the upper portion of the vagina, to a protrusion of the womb out of the vagina—*prolapsus completus*, or what is called by some writers, *procentia uteri*. The womb is kept in its normal position by the peritonæum and the broad ligaments, but can descend when there is a relaxed state of this apparatus. Undue pressure from above, straining and lifting, or standing too much on the feet, while the body is hot, may also cause it to descend. All debilitating diseases favor this malposition of the uterus, as leucorrhœa, excessive menstruation, chlorosis, anæmia, poor diet, etc.

SYMPTOMS.—There is a peculiar sensation of heaviness in the pelvis, and a feeling of great weight, as if everything within the abdomen would pass through the vagina. This sensation is worse in walking, after standing long on the feet, and after severe exercise. Pressure upon the bladder and rectum, causing constant desire to urinate and defecate, and generally, more or less leucorrhœa exists. Upon examination with the index-finger, the os uteri will be felt near the outer opening of the vaginal orifice, together with a fold of mucous membrane.

TREATMENT OF UTERINE DISPLACEMENTS.—In anteversion, the use of pessaries accomplishes but little, except in some exceptional cases. The uterus should first be reduced to its proper position with a uterine sound, and then Thomas' retroversion pessary should be introduced to keep it in its normal position, until the muscular tone of the parts is toned up. After replacing the uterus, which can be done with the sound, both in cases of anteversion and retroversion, and after correcting the malposition, the patient should have such direct tonics as have a special affinity for the uterus, as sepia, in very small doses, say gtt. 1 to 2 of the 3d dec. solution, for it must be remembered that this drug has powerful toxical effects. Helonias and cimicifuga are both good uterine tonics, as are also liliu tigrum, in doses of gtt. 2 to 5, three times a day; æsculum hippo. and ustilago, dose of either gtt. 3 to 5, every three hours; and aletris. Nux vomica often does well, in small doses.

The medical treatment in this affection consists in the administration of such medicines as will relieve the pathological conditions upon which the deformity depends. The disease often exists with chronic congestion of the uterus, which will generally yield

to the chloride of gold and sodium, in very small doses of gr. 1-50 to 1-60, three times a day. Very often this sized dose will prove toxic, Sepia will, also, often correct malposition of the uterus, and should always be tried, in small doses. Nux vomica has a direct tonic effect upon the muscles of the uterus, as it has upon all the muscles of the body; and should be used if sepia fail. Cimicifuga, in doses of gtt. 15, three or four times a day, has proved itself valuable in my hands; and so has lilium tigrum. If there be congestion, ustilago and belladonna are the best remedies; dose of the former, gtt. 3 to 5, and of the latter, gtt. 1 to 2. Æsculum and helonias are as applicable in prolapsus as in other malpositions. The use of corsets and heavy skirts must be prohibited; and, as temporary support, until the uterus can regain its usual tone, the soft rubber pessary may be worn. (Dr. Jackson's elastic soft rubber pessary is preferred). In cases of *procentia*, the uterus must be replaced before any other treatment is commenced. Some writers recommend amputation of the enlarged and elongated cervix, but I never had a case where I deemed this necessary. In addition to the above tonic treatment, I use an astringent wash, composed of Monsel's salt, $\frac{3}{4}$ 1 to aqua $\frac{3}{4}$ 4 or Monsel's solution, $\frac{3}{4}$ 1 to $\frac{3}{4}$ 1 of water, thrown up with a glass syringe against the os uteri, and retained there ten or fifteen minutes, by elevating the hips. This last is the most powerful astringent in the list, and may be used stronger and stronger, until its astringence begins to contract the muscles of the part so that it produces great soreness; as it will often do. I would rather have this than all the washes in the *Materia Medica*. With it, and proper internal tonics, I can effect a cure where all the pessaries have utterly failed. I treated a case, not long since, which had worn a pessary for months, until it had produced such violent ulceration, and leucorrhœa that the woman stank dreadfully. I threw away the pessary, and used for the fœtor and ulceration, the solution of iron as above, alternated with a solution of permanganate of potassium, gr. 5 to the ounce, with proper internal tonic treatment. I succeeded so well with this treatment that I have abandoned the pessary entirely in almost all cases.

Polypus of the Womb.—Uterine polypi are soft tumors, growing from the mucous surface on a pedicle or stem, and are generally within the womb, although there are interstitial fibroids, which are imbedded in the parenchyma of the uterus. They seldom exist in females under thirty years of age, and can only be diagnosed by a physical examination. The mucous polypi consist of an exuberant growth of the uterine mucous lining. They are usually pediculated, and consist either of distended mucous follicles, or are mere vascular bodies. They frequently cause violent hæmorrhage, and always excessive leucorrhœal discharge.

TREATMENT.—The phosphate of lime, in doses of gr. 3 to 5, three times a day, has much reputation, and so has the sanguinaria used externally and internally. Staphisagria, in doses of gtt. 1 to 2, three times a day, is recommended by some writers; and powdered tannin, locally applied, will sometimes destroy a soft polypus. Rhus toxicodendron, gtt. 1 to 2, every four hours, is highly recommended by some, and so is iodine. This affection properly belongs to the domain of surgery. The tumors may be removed by ligature, or torsion, and then the roots destroyed by application of diluted nitric acid. This acid should be so diluted that it will not corrode the sound flesh, which may be protected with oil.

Cancer of the Womb.—Cancer of the womb is most generally of the medullary variety; scirrhus and alveolar cancers occurring less frequently. The disease generally begins at the vaginal portion of the uterus, and very rarely extends to the fundus. It is very apt, however, to spread down the vagina, over the bladder and rectum, causing the most horrid destruction of these organs.

SYMPTOMS.—One of the first symptoms noticed by the patient, is severe pain in the small of the back, loins and groins, becoming more and more violent. At first there will be hæmorrhages at the monthly periods, but as the disease advances, they may occur at any time. A copious leucorrhœa sets in, which becomes more and more offensive and watery; corroding the parts it happens to touch. Cauliflower excrescence is a cancrioid hypertrophy of the papillæ at the mouth of the womb, which often attains very great size. It is usually in the shape of a cauliflower. Its color is a bright red, it bleeds very easily, and is very prone to cancerous degeneration. The constitution soon becomes prostrated from the pain and loss of blood. It is similar to cancer of the womb in its symptoms, and can only be certainly diagnosed by the introduction of the speculum, as is the case with cancer of the uterus. They are both apt to prove fatal.

TREATMENT.—The chloride of gold and sodium is one of our best remedies in this disease. It is indicated when there are very offensive discharges, and stinging, cutting pains in the uterine region. As soon as the disease has exhausted the vital powers, and the pains become burning, sharp, and worse at night; and the discharges grow acrid, corroding, offensive and dark colored; I find arsenic, or the iodide of arsenic very useful in small doses. I give gtt. 1 to 2 of tincture of arsenic, or gr. 1–30 to 1–20 of the iodide of arsenic four times a day. If the pain is intense and stitching, and there is nausea and vomiting, small doses of conium should be administered, and the cancer dressed with an ointment of the same drug. In cauliflower excrescence, where the menses are irregular and offensive, graphites (plumbago

or black lead) in doses of gr. 1 or 2 three or four times a day, will have a most excellent effect. At the same time, the excrecence should be washed in a solution of glycerine, water and creosote, $\frac{5}{3}$ 1 of glycerine, $\frac{5}{3}$ 1 of creosote, and $\frac{5}{3}$ 7 of water. Where the tumor is inclined to bleed easily; the tincture of thuja $\frac{5}{3}$ 1 to water $\frac{5}{3}$ 3, may be applied on lint, and renewed every three or four hours. Mitigation of the patient's sufferings is all that need be expected in this disease.

Metrorrhagia.—This disease consists of a more or less profuse hæmorrhage from the womb, between the menstrual periods. It may occur in the non-pregnant state, and seems to result from an abnormal flow of blood to the womb or from morbid growths in the uterus. It is very frequently produced by the peculiar physiological changes consequent upon the so-called "*change of life*"—cessation of the menses. Some of the worst cases that I have ever treated occurred at this period. This form of hæmorrhage may also set in during pregnancy. Some women menstruate several times after conception, without apparent injury; but in most women a hæmorrhage during pregnancy indicates abortion. A severe hæmorrhage, four or five months after conception, indicates placenta prævia, or miscarriage. In cases of abortion, the hæmorrhage may be very profuse, and generally occurs from imperfect contraction of the uterus. Metrorrhagia is frequently preceded by a chill, and the hæmorrhage comes in gushes, or in a continued flow of bright red, or dark blood. The face soon bleaches, the hands and feet grow cold, and there may be labor-like pains or colic. After great loss of blood, the patient becomes anæmic.

TREATMENT.—Ipecac., in doses of gtt. 1 to 2 of a saturated tincture of the fresh root, has often done good service, especially where the hæmorrhage is of a bright red color, and is accompanied by nausea and vomiting. It may be repeated every twenty-five or thirty minutes until the hæmorrhage is arrested. If this fail, gtt. 3 to 5 of the tincture of cannabis indica should be ordered every half hour until the flow ceases. If the flooding occurs with great relaxation in feeble cachectic women, I give secale cornutum, in doses of gtt. 10 to 80 of a good tincture or fluid extract, every one or two hours, as required. In robust, florid women, where the hæmorrhage originates from uterine congestion, or inflammation, (in which case the discharge is of a bright red color,) the tincture of sabina in doses of gtt. 1 to 3, should be administered every two or three hours, or repeated oftener in smaller doses. Should this fail to stop the hæmorrhage, the oil of erigeron should be alternated, in doses of gtt. 8. There are still other remedies recommended, as apocynum cannabinum, in doses of gtt. 1, every ten or fifteen minutes. I have succeeded well with tinc-

ture trillium pendulum, and also with gr. 4 doses of pure berberine sulphate.

Menorrhagia.—This a profuse flow of blood from the uterus at the regular menstrual period. These periods may come too soon, or may last too long; and, in some cases, the menses are not only too profuse, but come on too early, and last too long, hence proving very exhausting,

CAUSES.—Morbid growths in the uterus, structural changes, etc., may give rise to this hæmorrhage, or it may result from stagnation of blood in the uterine veins, and lung and heart diseases. Preternatural determination of blood to the uterus, sexual excesses, sexual excitement, or onanism, may also cause it. Sometimes it results from a hæmorrhagic diathesis, as in purpura, scurvy, small pox, typhus fever, measles, etc. The blood in this form of hæmorrhage of the womb, is either fluid or coagulated, and differs in color.

TREATMENT.—The treatment is similar to that detailed above for metrorrhagia. If the discharges be of a bright red color, and there be nausea and vomiting, ipecacuanha is the most reliable remedy, in doses of gtt. 1 to 3, every half hour or hour, according to the severity of the flow. If this drug does not control the hæmorrhage in due time, tincture of sabina may be used in alternation, every two or three hours. This latter is a most valuable remedy. Should the uterus be relaxed, ergot, in doses of gtt. 30 to 60, every one or two hours, will aid the above remedies in stopping the hæmorrhage; or it may alternate with oil of erigeron. I have often succeeded well with cannabis indica, in doses of gtt. 5. Tincture of rue is highly praised by some writers, but I have never tried it myself. If the discharge is black and lumpy, I find the tincture of crocus sativus (saffron,) very useful in doses of gtt. 2 or 3, every two hours, or in smaller doses every half hour. Where there are cardiac complications, and the flow is of a dark color and thick, tincture of cereus grandiflorous may be administered in doses of gtt. 1 to 5, every hour, in alternation with charcoal in small doses, or with the tincture of chamomilla, in doses of gtt. 1 to 2. In cases of vascular excitement, with flushed face, throbbing of the carotids, full, bounding pulse, nausea, etc., gtt. 3 to 5 of belladonna, every three hours, will aid other remedies, and is most valuable in alternation with ipecacuanha. Sometimes small and repeated doses of the bromides have done well, especially in rather passive forms. In this form, the tincture of hamamelis, in doses of gtt. 5, every fifteen minutes, has proved very efficient, and so has trillium pendulum. Ustilago maidis is also an invaluable remedy. In the interval I give tonics and senecio aureus. The best tonic is helonias dioica.

Amenorrhœa.—This may occur any time between the ages of

puberty and the climacteric. After puberty, females should menstruate regularly, except during pregnancy and nursing. Non-appearance of the menses at the age of puberty may be from chlorosis, scrofula, rachitis, tuberculosis, etc. It may also arise from degeneration of the ovaries, but is oftener from catarrhal affections of the womb. It has occurred from spinal diseases, occlusion of the os uteri, and imperforate hymen. Metritis is a common cause of this obstruction. Sometimes vicarious menstruation will take place. This is a flow of blood, at the monthly period, from some other mucous membrane, as the nose, eyes, bowels or ears, or from wounds. With this obstruction, there may be headache, dyspnoea, dyspepsia, sadness, sleeplessness, œdema, palpitation of the heart, and hæmorrhages of various parts, as above stated.

TREATMENT.—If delayed menstruation occur in rheumatic subjects, or from getting the feet wet at the time it should take place, aconite, in doses of gtt. $\frac{1}{2}$ to 1 three or four times a day, alternated with cimicifuga, will often bring on the flow. Delay of first menses, in mild dispositions, should be treated with gtt. 3 to 5 of pulsatilla, three times a day. If there is anæmia, however, helonias and iron will be necessary, alternated with cimicifuga. If the delay, or obstruction, should be the result of an atonic condition, the chloride of gold and sodium will arouse the dormant energies of the system, and aid in bringing on the menses. If, with obstruction, there exists indigestion and constipation, nuxvomica in doses of gtt. 2 to 5 three times a day, will have excellent results. If, in the interval, there exists cerebral irritation, belladonna in doses of gtt. 1 to 2 may alternate other indicated remedies, or should there be leucorrhœa instead of the menses, I give sepia, in very small doses, gtt. $\frac{1}{4}$ to $\frac{1}{2}$, three times a day, and not oftener for it is highly toxic. If there be congestion of the head, and delirium, or a tendency to dropsy, the tincture of apis mel., in doses of gtt. 3 to 5 may alternate with aconite or belladonna, every three or four hours, according to the urgency of the symptoms. I have frequently succeeded well with gtt. 30, of senecio aureus, three times a day. If obstruction is due to rheumatic exposure, I order bryonia, in doses of gtt. 2 to 3 of a saturated tincture, three times a day. The sitz-bath should always be used at and near the menstrual period. In functional inactivity, apiol has been highly praised by Prof. Bartholow. Where chlorosis or anæmia exists, iron, aletris farinosa, and helonias dioica are proper remedies, and will always aid in the cure.

Dysmenorrhœa.—Dysmenorrhœa is usually attended by unusual pain, which may continue only a day or two, or the entire menstrual period. It is generally caused by one of four things, viz.: (1) structural changes, or flexions of the uterus, (the mechanical dysmenorrhœa of writers); (2) congestion of the uterus, (com-

mencing with signs of congestion of the pelvic organs, as strong action of the heart, and congestion of the head with fever, which is believed to be produced by a thickening of the peritoneal lining of the ovaries, and the consequent difficult perforation of the Graafian follicle); (3) the formation of an exudation between the mucous coat and the parenchyma of the uterus, (membranous dysmenorrhœa in consequence of which, portions of the loosened membrane are thrown off and discharged); and (4) a morbid sensibility (hyperæsthesia) of the nervous system controlling the uterine organs, called neuralgic dysmenorrhœa. In this form the menses are attended with extreme pain in the uterus, back, and limbs, and sometimes with neuralgic pains in various parts, cramps, etc.

TREATMENT.—In the congestive form, where the discharge is of a bright red color, aconite in drop doses every hour or two, alternated with gtt. 3 of pulsatilla, will be apt to give relief. If it is of the inflammatory order, the above remedies should be relied upon at first, but if they fail, the acetate of ammonium should be administered in doses of $\bar{3} \frac{1}{2}$ to 1 every two hours. If dysmenorrhœa is complicated with hæmorrhoids, and there be pelvic congestion, collinsonia in doses of gtt. 10 to 15 every two hours, may be alternated with other appropriate remedies. If the discharge is scanty, I use sepia (juice of cuttle-fish) in doses of gtt. $\frac{1}{2}$ given every two hours. In the spasmodic form we have several very positive medicines, as xanthoxylum fraxineum (tincture of the bark and berries), which I give in doses of gtt. 30 every half hour. If this fails in two hours, gtt. 15 to 20 of tincture of gelsemium will be effective. If this does not stop the spasms, tincture of viburnum prunifolium may be used in doses of $\bar{3}$ 1 every half hour. If this cannot be obtained, the tincture of viburnum opulum may be substituted in the same sized dose. Cimicifuga in doses of gtt. 10 to 15 often readily relieves the congestive form. I have also relieved it with gtt. 30 to 60 of the ammoniated tincture of guaiacum every two or three hours. Cannabis indica is the best remedy where the discharge is very profuse; the dose is gtt. 3 to 5 of the tincture. The treatment in the inter-menstrual period is essential to relieve the paroxysms. The tinctures of senecio aureus and caulophyllum thalictroides are invaluable in the radical cure of this very painful affliction of women. I usually alternate these two remedies, and give them in doses of gtt. 30 to 40 each, three times a day. If the patient be of a scrofulous habit, the compound tincture of iodine in doses of gtt. 3 to 4 three times a day may be ordered, in alternation with the senecio aureus. If there be any cutaneous disease connected with dysmenorrhœa, sulphur will aid the other indicated remedies in the cure. If, however, the eruption of the skin be inclined to suppurate freely, tincture of arsenic in doses of gtt. 2 three times a day, acts admirably.

When the dysmenorrhœa is associated with rheumatism, I have found the tinctures of *cimicifuga* and gum *guaiacum* to be very efficacious in doses suited to the strength of the patient. In all cases where the patient is anæmic, iron should be used, alternated with *helonias diocia*. I prefer the phosphate or pyrophosphate of iron. The patient should avoid all very sudden changes, and keep the feet warm and dry, bathing them at night in warm water.

Pruritus Vulvæ.—This is an intolerable itching of the vulvæ; so severe as to prevent sleep, and to cause other nervous affections. Upon examination, the vagina will be found rather dry, and with an eruption on the mucous surface and labia. It is believed that this disease is caused by a stagnation of the blood in the vaginal veins, for the subjects of pruritus are often the subjects also of hæmorrhoids, or piles.

TREATMENT.—According to the above pathology, *collinsonia*, in doses of gtt. 10 to 15, three times a day, would be indicated, especially if constipation of the bowels existed with the pruritus. If the itching be more severe after the menstrual period, an ointment of conium will usually lessen this symptom. If there be leucorrhœa with the pruritus, *sepia*, gtt. $\frac{1}{2}$ to 1, three times a day, will aid materially in the final cure. If hæmorrhoids set in with the pruritus, I prescribe tincture of sulphur in doses of gtt. 5 to 10, or gr. 1 to 2, of pulverized sulphur, three times a day. I have tried sulphurous acid, with the very best effects, applying it locally, while I was giving the other indicated remedies internally. *Platinum* is highly praised by some writers, and so is *lycopodium*, used locally and internally. The tincture of *grindelia robusta*, 1 part to 10 of water, is a first-rate application, and so is a lotion of *hamamelis*, especially if the disease is connected with piles.

Mastitis.—This form of inflammation generally takes place at the commencement of lactation.

CAUSES.—It originates from a stagnation of milk in the gland, or a tube of the milk gland. This, in turn, may be from the inability of the child to completely empty the breast, from imperfection of the nipples, or from undue pressure exercised upon the gland by tight dresses. There is first an inflammation of the *milk ducts* of the *mammæ*, which soon spreads and inflames the whole gland. The inflammation may, in some rare cases, begin in the subcutaneous cellular tissues, (rather an erysipelatous form,) and spreading inward, produce a caking of a portion of the breast. This form may originate from injury of the breast by external bruises, from exposure to intense cold, and from severe pressure on the organ by tight clothing. This painful affection, if not arrested in the early stage, will result in an abscess, and when it once begins to suppurate, a succession of abscesses may continue for months.

TREATMENT.—If the patient can be seen in the early stage of the disease, *phytolacca*, used both locally and internally, will arrest the disease. I poultice the breast with Indian meal wet in a strong tea of the root, and give gtt. 5 of the tincture of green root, every two hours. This treatment has seldom failed with me. The next best remedy is *belladonna*, used locally and internally. If all these fail, the abscess should be opened to let out the pus.

Scirrhus, or Cancer of the Mammæ.—Scirrhus is the most frequent form of mastitis, and may begin deep in the gland, or near the surface. It can be felt as a round tumor within the breast, small at first, but later, large and very hard. As it increases in size, it draws the nipple inward until it presents a navel-like depression. The progress of this tumor may be slow, but finally suppuration forms a deep ulcer, with callous, elevated edges, discharging an ichorous fluid, and often having a very offensive odor, especially in very warm weather. This should be disinfected. *Medullary Sarcomæ.*—These appear as one or several tumors, which rapidly destroy the mammary gland, and not unfrequently conglomerate into large masses of irregular shape. Scirrhus cancer is distinguished from other tumors of the breast by very intense pain, which is stinging, burning, and lancinating in character.

CAUSE.—The cause is obscure, and there is some peculiar constitutional contamination, the nature of which we do not know.

TREATMENT.—The only successful treatment of the medullary form, is by the surgeon's knife, at an early period. All cases that I have ever seen have proved fatal. The scirrhus form may be treated in the same way, at the commencement, but unless it is done early, I believe that enucleation by proper caustics is better. The chloride of zinc, gold, and bromium have all been successfully used.

CHAPTER XVI.

DISEASES OF THE SPINE.

The spinal column may be considered as a continuation of the head and the spinal cord and its membranes as answering to the dura mater, arachnoid, and pia mater, they being a continuation of the same membranes, and sending forth branches of nerves to the various parts of the body, like the brain itself. The diseases of the spinal cord correspond with those of the brain.

Anæmia.—This state of affairs is due to a deficiency of blood in the cord, and is generally associated with other diseases of the body. Its symptoms are obscure, but there is always great weakness, dyspnœa, frequent palpitations of the heart, and general anæmia of the whole body.

Hyperæmia.—Hyperæmia of the spinal cord is usually combined with congestion of the brain. It may be the result of local disturbances of the circulation of the blood, from hæmorrhoids, menstrual affections, pregnancy in women, and tumors. It exists sometimes in febrile affections, and in severe spasmodic diseases.

SYMPTOMS.—There will be difficulty in voluntary motion, and paralysis of the lower extremities, and sometimes also of the upper limbs. This paralysis almost always affects both sides, more or less, rarely but one side. Respiration is often difficult, and the muscles of the bladder and the rectum are affected.

TREATMENT.—The treatment of hyperæmia, in the active form, should consist of aconite, in doses of gtt. 1 every two or three hours, according to the intensity of the disease. This drug may be alternated with gtt. 10 of gelsemium, every three hours. In a passive form, gtt. 10 to 20 of the fluid extract of ergot may be required every three hours.

Spina Bifida.—Hydrorrhachis congenita is an analogous affection to hydrocephalus. It consists in an imperfect development of the fœtus, which may have been prematurely expelled from the uterus. There are instances, however, in which children are born with spina bifida. Like hydrocephalus congenitus, spina bifida consists of a dropsical effusion of serum, either between the dura mater and the vertebræ, in the subarachnoidal space, or within the central canal of the cord. Now when this effusion takes place before the vertebra has closed perfectly, the pressure of the fluid within prevents a final cure, and thus, from deficiency of the vertebral arches, the spinal column is posteriorly cleft in two; thus giving rise to the name, *spina bifida*. Only one of the vertebræ

may be unenclosed, or it may affect the whole spinal column. Very often, however, it is confined to the lumbar, cervical, or sacral regions. The fluid passes out, and, according to the quantity, forms a large or small tumor. After birth, this tumor rapidly increases and fluctuates, and becomes denser and larger when the child cries, or strains in any way. The tumor is painful upon firm external pressure, and may cause convulsions, or, if hydrocephalus is associated with spina bifida, there will be stupor and general paralytic symptoms. Sometimes, portions of the spinal marrow protrude with the serum. In this case, the tumors fluctuate less than when they are filled with serum alone. In rare cases, they are ruptured at the birth of the child, or else they burst after birth, and convulsions take place, finally ending in the death of the child. All cases are apt to prove fatal before puberty.

TREATMENT.—One of the leading remedies indicated by the pathological condition is carbonate of lime, gr. 1 doses, three times a day, alternated with phosphite of lime, gr. 2, three times a day. Occasionally, it is advisable to tap the tumor, and inject tincture of iodine and glycerine, in equal parts, into the sac. Iodine, gr. $\frac{1}{2}$, iodide of potassium, gr. 5, water $3\frac{1}{8}$, may be used, too, as an injection. Spina bifida, is, generally speaking, a fatal disease; nevertheless, we should do all we can to prolong life and effect a cure, where it is possible, although such efforts have seldom been successful under my observation. One patient, I recollect, got well, with some curvature of the spine.

Spinal Meningitis.—This is an inflammation of the spinal *pia mater*. Swelling of the *dura mater* and of the *arachnoid* is seldom met with as a primary disease.

PATHOLOGY.—The *pia mater* is generally of a pale-reddish color, sometimes purple, swollen, and infiltrated, with a jelly-like or bloody exudation. When the redness fades away, the membrane is of a dirty yellowish and greyish color, covered with a dirty, looking exudation. Sometimes the whole membrane is inflamed reaching to the cavity of the cranium. After recovery there are adhesions, hyperæmia, thickening of the membrane, and perhaps hydrorrhachis and atrophy of the spinal marrow. There is an epidemic form, combined with cerebral meningitis, as in spotted fever, which we will discuss in another place.

SYMPTOMS.—If combined with cerebral affections, there will be such marked brain symptoms as to altogether disguise the spinal affection. If swelling is confined to the spinal *pia mater*, we find pain in the back, at the point of inflammation, which is aggravated by movement. There is also pain in the limbs, which is made worse by motion. Stiffness of the muscles exists, and in some cases episthotonos, especially if the cervical portion is the seat of trouble. The least motion of the spine gives rise to tonic

spasms, while reflex irritation of the peripheric extremities of the nerves does not produce them. The acute form may terminate in the chronic form, with exudation and paraplegia as a result. This discharge may terminate in tubercular degeneration, followed by œdema of the lungs, catarrh of the bladder, etc.

TREATMENT.—Where the skin is dry and hot, and the pulse small, quick, and like a cord or thread, aconite is a valuable remedy, and may be ordered in doses of gtt. 1, every hour, until the pulse becomes soft and slower, and then every two hours. If there is a throbbing pain in the spine, drowsiness, with inability to sleep, and spells of nervous starting, gtt. 3, of belladonna, should be given every two hours, until these symptoms give way. If the affection is connected with, or proceeds from disease of the bones of the spinal column, the phosphate of lime will be a very good remedy in gr. 2 doses, three times a day. In the chronic form, where there is inability to lift the limbs, I use cocculus indicus, in doses of gtt. 1 to 3, every four hours until relief is given. In chronic cases, when aggravated by cold, changes of weather, duleamara, in doses of gtt. 5, three times a day, may be given.

Myelitis.—Myelitis is of less frequent occurrence than meningitis; and when it exists it generally produces meningitis.

PATHOLOGY.—Its pathology resembles that of encephalitis. There is redness, swelling and softening, either throughout the entire length of the gray substance of the spinal marrow alone, or it is an inflammation extending diagonally through a portion of the different parts of the spinal cord. Myelitis is the result of external injuries, and exposure to cold, or it may be associated with inflammation of other adjacent organs. In some rare instances it has been seen during the course of typhus or typhoid fever and pneumonia.

SYMPTOMS.—One of the first symptoms is a disorder of sensibility and motility. The patient may feel a sensation of coldness, numbness, prickling and pain in the toes and fingers, which gradually extends from the periphery towards the trunk, on one or both sides. There is more or less pain in the spine, which is aggravated by pressure upon the spinal processes, and the parts which are enervated by the diseased roots are more or less constricted, and either very sensitive or the reverse. If the degeneration of tissue should take place throughout the whole substance of the spinal marrow, there may be complete anæsthesia or insensibility of the parts. The deficiency of motion first shows itself in unwieldiness of the peripheric muscles, and this may terminate in complete paralysis of the lower extremities (this is of very frequent occurrence); but if the dorsal region is affected, it causes paralysis of the sphincters ani and vesicæ in addition. If the

trouble be still higher up, there will be great palpitation of the heart. Should the cervical region be affected, the upper extremities, respiratory motion, deglutition and speech will be more or less deficient. If the lesion is confined to the cervical region, only the upper extremities are paralyzed.

PROGNOSIS.—The lower the seat of inflammation the more slowly it advances to a fatal termination. Patients may live ten or fifteen years with paraplegia, but where the cervical portion of the spinal cord is inflamed, death may take place in a short time from paralysis of the respiratory muscles. Where the lesion is limited to one or more of the lateral cords the paralytic symptoms may be confined to one side for awhile, with more or less insensibility; or there may be insensibility on one side, and paralysis on the other side, as in some traumatic wounds. One frequent symptom of myelitis is the erection of the penis, which may remain so for days.

TREATMENT.—As this disease is generally accompanied by meningitis, the same treatment will be required as for that disease. In the active stage aconite, in doses of gtt. 1 every hour, will serve to control arterial excitement. If there is great pain in the sacral regions; anæsthesia of all the limbs; paralysis of the lower limbs; convulsive twitching and shocks of the paralyzed limbs; painful contractions of the flexor muscles; and paralysis of the rectum and bladder, gtt. 15 of ergot may be administered. If this affection occurs after sexual excess (as it often does) or in connection with an inflammatory condition of the vertebræ hypophosphate of lime will be of material service, alternated with other indicated remedies. I usually give it in the form of a syrup, gr. 2 or 3, three times a day. In the chronic form counter-irritation may be used, by vesicating the spine with diluted acetic acid, or croton oil. In the latter form the hypophosphite of lime, sodium and magnesium in small doses, will aid in the radical cure of this disease. If softening of the spinal marrow should result, apoplexy will set in, and cause death; or, it may terminate in *sclerosis medullæ spinalis* (hardening of the spinal marrow); this also may terminate in apoplexy, and finally in death. In either case medicines exert but slight control over the morbid process. Belladonna, in drop doses, will mitigate the symptoms for a time.

Multiple Sclerosis: Chronic Myelitis.—This form of chronic myelitis is often associated with chronic encephalitis, which is characterized by the development of numerous insulated *sclerotic nodules* of various sizes, and of a chronic inflammatory nature. These *nodules* are scattered throughout the entire spinal cord, and very often over all the brain. Occasionally a less intense, but more diffuse *sclerosis* unites the different *nodules* together. Women

are oftener the subjects of this disease than men, and it rarely occurs later in life than thirty years of age, or earlier than ten years.

CAUSES.—Severe mental or bodily exertion may give rise to this disease, and it may also be caused by catching cold, traumatic influences, pregnancy, hysteria, and acute diseases.

SYMPTOMS.—Disturbance of sensibility is often one of the first marked symptoms. A want of co-ordination (*ataxia*) is also often observed, and a peculiar tremor accompanying voluntary motions, which progressively increases. This tremor, which appears at every attempt to move distinguishes sclerosis from *paralysis agitans*. Alteration in speech is another symptom, as is also alteration of the voice. Speech is more or less indistinct and hesitating, and the voice becomes monotonous and weak. The movement of the tongue and lips is impaired, and mastication and deglutition become very difficult. The sight is disturbed, there being diplopia, amblyopia, and often blindness, Vertigo, sleeplessness, violent headache, and, occasionally *apoplectic form attacks* may be present, which are apt to be followed by febrile excitement and hemiplegia. The symptoms in each individual vary according to the extent and location of the sclerotic nodules.

TREATMENT.—In cases where the gait is tottering, the legs weak, speech much embarrassed, amaurosis is present, pupils are widely dilated, and there is deafness, phosphorus, in some form, is indicated, and I prefer the phosphide of zinc, in doses of gr. 1–10 to 1–14 in water, every four hours. Where the palsy is preceded by twitching of the muscles, or trembling, I order physostigma, in doses of gtt. 1 to 3, every four hours. Where there is vertigo, staggering gait, trembling, general debility, cholera-like convulsions in the limbs, transient blindness and sleeplessness, nitrate of silver, in very small doses, is indicated. This may be alternated with gtt. 1 of *nux vomica* (saturated tincture) every four hours. These remedies are also indicated in *tabes dorsalis*, or gray degeneration of the *posterior calamus*.

CHAPTER XVII.

DISEASES OF THE MOTORY APPARATUS.

Rheumatism.—Rheumatism attacks the fibrous tissues, joints, aponeuroses, sheaths of the tendons, neurilemma, periosteum, and the muscles and tendons. It is a very painful affection, caused doubtless by inflammation of a peculiar character, and some nutritive disturbance, not well understood now by the best pathologists. The immediate cause of this form of inflammation is exposure to cold or wet. Rheumatism may be acute or chronic.

Acute Rheumatism.—This form generally has its seat in the synovial membranes of one or several joints. By some peculiar nutritive disturbance, the joints become inflamed, and yield a scanty exudation, which contains but a small quantity of fibrin or pus-globules. An inflammatory œdema of the surrounding cellular tissue rapidly takes place. In some rare cases, the exudation may contain both fibrin and pus-globules, especially where the inflammation runs high, and in young and vigorous subjects. Post mortem examination reveals ecchymosed spots in the synovial capsule, which is filled with a purulent exudate; even the ends of the bones may be infiltrated by bloody extravasations. The heart and large vessels contain much fibrin; and there are often structural changes in the heart itself, such as pericarditis, etc.

PREDISPOSITION.—Old age and childhood are less liable to this disease than youth and middle-age; and those who have once been attacked by this disease are more prone to it than those who have not had it. Robust persons seem more liable to be attacked by rheumatism than the feeble and debilitated. It prevails in all latitudes, but more in the temperate than in the hot or polar zones, and oftener in winter and spring than in summer and autumn.

SYMPTOMS.—The disease may be preceded by a chill or chilly sensation, or it may come on gradually. Very soon the fever rises, with severe pain and swelling in one or several joints, which become very red. The swelling may be confined to the part first attacked, or it may spread from joint to joint, enveloping the spine and symphysis pubis, and sometimes even the joints of the toes and fingers. The pain is so excruciating as to compel the patient to keep in motion, which often aggravates the pain.

FEVER.—The fever is often very high, the temperature ranging between 104° and 104.9 , although the temperature may not run

higher than 100° , and the pulse may not be over ninety to one hundred beats in a minute. Occasionally, there may be free perspiration without any reduction of the inflammation. The urine is scanty, and loaded with urates and uric acid.

About twenty per cent. of the cases of rheumatism of the purely acute type are complicated with endocarditis, and about fourteen per cent. are complicated with pericarditis. Complication with myocarditis are not so frequent, but occasionally it occurs with pleuritis, pneumonia, meningitis or even cerebro-spinal meningitis. Its course is not regular, passing off sometimes in from 10 to 12 days, or continuing several weeks, and finally terminating in the chronic form. Rheumatism seldom ends in death, unless it be complicated with disease of the heart, lungs, or meninges of the brain. It is liable to return and produce disease of the valves of the heart, which finally proves fatal.

TREATMENT.—This form of inflammation has yielded to aconite, (one drop every hour or two,) and salicylic acid, (from the oil of wintergreen,) or salicylate of sodium, gr. 3 to 5 every three hours dissolved in sweet spirits of nitre. I usually add gr. 40 of salicylic acid to 3 1 of sweet spirits of nitre, giving a teaspoonful every three hours. I alternate this mixture with the tinct. of aconite, until the fever falls considerably, and then lessen the quantity of both remedies. If the pain still remains after the fever is subdued, and is increased by motion, I order gtt. $\frac{1}{3}$ to 1 of bryonia every three hours, but if moving the limbs give ease, gtt. 1 of rhus tox. is the indicated remedy. The most speedy relief to acute rheumatism is from an alcoholic or camphorated vapor bath, made by evaporated camphor (made in alcohol) on an iron or flat rock, just hot enough to evaporate the spirits of camphor. This bath should be taken by the patient while his body is bare, so that the camphor may come into contact with the skin while the pores are all freely open. The patient may sit in a chair, well enveloped in blankets, with a plank under him, so as to prevent the hot vapor of the camphor from burning. I have relieved some very extreme cases in this way, in three sittings. *Manaca*—the *franciscea uniflora* (Pohl), (lately introduced from Brazil, by Parke, Davis & Co., of Detroit, Mich.)—has acted well in some cases, given in doses of gtt. 10 to 20, every three hours. Bonzoate of ammonium is also a good remedy where the disease is associated with more or less indigestion. Lithium and its salts are invaluable where there is an acid state of the urine. I have cured rheumatism in the sub-acute form, with *phytolacca* and tincture of *colchicum*, given in gtt. 5 doses, *ter die*.

Chronic Rheumatism.—This form rarely occurs, unless it has been preceded by the acute or sub-acute form. Post mortem examination reveals a thickened condition of the synovial capsules

and ligaments, and sometimes the cartilages of the bones are spongy, and the synovial fluid turbid. Occasionally single joints become very painful from motion and show paroxysms of aggravation, chiefly at night or in damp, cold weather. In sub-acute attacks, there is more or less swelling, but not much, if any, general fever. Sometimes the sub-acute or chronic form of rheumatism may be complicated with *muscular rheumatism*, and also with certain forms of paralytic and neuralgic affections, which are usually called rheumatism, or *neuralgic rheumatism*. Muscular rheumatism receives its name according to the locality. The principal form is cephalalgia rheumatica, which attacks the frontal, occipital or temporal muscle, periosteum of the skull, or the aponeurosis. Torticollis rheumatism, or myalgia cervicalis ("stiff neck" or "crick of the neck," has its seat in the cervical muscles, rendering any movement of the head very difficult and painful, and frequently drawing the neck to one side. This position may become a permanent one if the muscles should contract. Pleurodynia rheumatica is myalgia of the breast and intercostal space, and principally attacks the pectoralis major and intercostal muscles. When it attacks the pectoralis major, it hinders the motions of the arms, and when it attacks the intercostal muscles, it impedes respiration, and simulates pleuritis, for which it is oft-times mistaken. Omodynia rheumatica, *myalgia scapularis*, is rheumatism of the muscles of the shoulders and back, and causes great pain in moving the back or the trunk in any direction. Lumbago rheumatica, myalgia lumbalis, ("kink in the back"), attacks the lumbar muscles and the lumbo-dorsalis fascia. It frequently strikes the patient down as he attempts to stoop or lift some heavy weight, and is characterized by a lancinating keen, darting, pain in the lumbar regions or hip joint, and sometimes in some of the other muscles about the pelvic region.

TREATMENT.—For lumbago, berberis vulgaris (tinct.), every three hours, has proven very satisfactory in some cases, as has also gtt. 1 to 2 of the tincture of rhus tox., especially where the patient is compelled to move about to get a little respite from the pain. Where the pain is tearing, and there is irritability of the bladder, I order benzoic acid in doses of gr. 3 or 4, three times a day, alternated with cimicifuga. Should there be anæmia, iron will be required, as well as other remedies. Benzoate of ammonium is also a good remedy. In cases recently treated, manaca gave quick relief in doses of gtt. 30 of the plain extract, every three hours. If there is constipation, torpid liver, sweat without relief, great soreness of the flesh, lameness and stiffness of the limbs, with a drawing pain in hips, thighs, legs and feet, cheli-

donium in doses of gtt. 30 of the fluid extract or saturated tincture, acts admirably. Cimicifuga is very valuable alternated with chelidonium. Where the pain is tearing, worse in the evening and at night, attended with great soreness, numbness, and swelling of the parts, arnica in doses of gtt. 1 to 2, every three hours, will be apt to give more or less relief. If the pains are in the bones, and there is great irritability of the bladder, with strong ammoniacal smelling urine, benzoic acid is the indicated remedy, administered in doses of gr. 3 or 4, four times daily. If the small joints, as the fingers and toes, are the parts affected, caulophyllum will do good service, using gtt. 30 to 60 of the saturated tincture. If the disease affects the periosteum and synovial membrane of the joints, especially the small joints and fibrous tissues, and is accompanied with acid sweat and urine, I find colchicum in doses of gtt. 20 three times a day, very useful, alternated with salicylic acid. In some cases, phytolacca has acted remarkably well for me. If the pains are erratic, and much increased in cold, damp weather, and if there be constipation of the bowels, tension or drawing of the tendons, great sensitiveness to wind or open air, and hot head and cold feet, small doses of sulphur will do effective service. Where there are rheumatic pains in the limbs, attended with numbness of the joints, and keen pains when touched, a drawing of the fibrous tissues, joints and sheaths of nerves, with a feeling of formication and lameness, *which is worse in bed or at rest*, and better when moving about, rhns toxicodendron is the remedy indicated, and must be given every four hours in doses of gtt. $\frac{1}{2}$ to 1. Rhododendron is highly praised by some English writers, especially in chronic rheumatism, and so is stieta pulmoneca, but the latter has not seemed to do any material good in cases where I have tried it. Ranunculus is recommended in cases that affect the chest, diaphragm and scapula, and in spasmodic pains in the arms and thighs, especially in women. When produced by mercury, or from gonorrhœa checked suddenly, sarsaparilla will aid iodide of potassium in the cure. Where it effects the heart, cereus grandiflorous and spigelia are the best remedies, giving gtt. 10 of each, every hour, or alternating them with one another. If the digestion is very feeble, nux vomica, in doses of gtt. 3 to 5, is a valuable remedy three times a day.

Gout.—This disease very rarely attacks persons under thirty years of age, very young children or infants. Old men are subject to it who live on a rich diet, or those who habitually indulge in the use of beer, wine, and other acids, and take but little exercise. It seems to be hereditary in families, and this predisposition to the disease is easily aroused and put into activity by surcharging the blood with nitrogenized substances. After gout has existed for some time, or become chronic, a chalky deposit is left,

consisting of the urate of sodium, or sometimes of uric acid with lime, magnesium and ammonium. This deposit either lines the internal surface of the synovial capsule as a soft substance, or incrustates at the cartilages of the bones as a hard mass, or even fills the joints, and causes, in many cases, ankylosis. At the same time there may be deposits on the external surface of synovial capsules or in the cellular tissues, which gives rise to hard nodosities. In one case that I examined—that of an old inebriate—there was a large deposit under the skin just above the knee-joint, which was as large as an egg. Attacks of gout come on very suddenly, and generally at night time. They commence with a burning, screwing pain in one or both of the big toes or the heel. The parts affected soon become swollen and red, and the patient has fever, thirst, dry skin, and highly concentrated urine. The disease may abate in violence in the morning, and the patient may pass the day comfortably, but it will return the next night with the same violence. Thus it will be apt to continue for a week or ten days, when the pain, redness and swelling gradually subside, the skin of the affected part peeling off. If the patient's constitutional proclivity to the disease is not arrested, it will return again and again, involving other joints. It may finally attack the finger-joints, the knee-joints and shoulder-joint. The disease eventually becomes chronic, and is attended by derangement of the digestive organs. The swelling also remains longer and longer between the attacks, and in some cases, changes into a hard *tophus*. These hardened, chalky deposits within the joints not unfrequently terminate in abscesses, which may break and discharge pus mixed with calcareous substances. The internal organs, as the stomach, brain or heart, are also liable to be attacked. If it attack the stomach, it produces severe cardialgia, vomiting and nausea; if the brain, apoplexy, headache, vertigo, delirium and sopor; or, if it attack the heart, it gives rise to dyspnœa, syncope, palpitation, etc.

TREATMENT.—One of the first things to be done, is to regulate the patient's diet, and make him take exercise. In acute attacks, the following remedies are indicated: aconite, in doses of gtt. 1, every two hours, until the fever is subdued, and then gtt. 10 to 20, of colchium, every three hours, should follow. When it becomes a chronic form, the phosphate of ammonium may alternate with colocynth in small doses. The phosphate of lime in gr. 2 doses, is also a valuable remedy, and should not be forgotten. In some cases, the iodide of potassium has done great good, and in others, the gum guaiacum, in *ammoniated tincture*, has proven valuable. Where there are gouty concretions, benzoic acid, or the benzoate of ammonium, will do good service in gr. 3 doses, three or four times a day. The carbonate, or citrate of lithium,

in doses of gr. 3 or 4, three times a day, will meet this last condition, as well as, or better than, the benzoic acid. Lycopodium is indicated where there are hardened concretions about the joints, and may alternate the carb. of lithium. Benzoate of ammonium will be found to do well in many cases. It should be given wherever the blood is surcharged with urates or uric acid. The digestion should also be corrected, so as to cutoff the source of the acid in the blood, for which purpose tonics are required.

CHAPTER XVIII.

DISEASES OF THE OSSEOUS SYSTEM.

Rachitis.—This is due to imperfect ossification and a preponderance of cartilaginous and fibrous growth in the bony structures of the body. In consequence of this, the bones remain soft, and are easily broken or bent; the epiphyses of the long bones are easily bent, and the diaphyses are easily broken. Children are often very much deformed by this disease, their legs being crooked, their spines curved, and the breast so deformed as to present the sharpness of that of a chicken. Rachitis is apt to occur between the first and second dentition.

CAUSES.—The causes of this disease are quite obscure. Some pathologists believe it to originate from a want of proper food, that is, food deficient in hypophosphites. Americans live on the finest flour, containing the starch of the grain, while the better part, which is the darker and coarser, lies next to the bran, and is rejected and fed to cattle. This coarser flour contains the phosphites and other rich elements of the grain. This affection may sometimes originate from a want of proper assimilation, and, again, may be caused by nutritive disturbances in the cartilages of the epiphyses, and in the periosteum.

SIGNS.—One of the first symptoms is a very obstinate diarrhœa, consisting of a foamy, fermented discharge, with great emaciation. Children affected with this disease lie with their limbs extended, and dread being moved. Very soon the epiphyses become tumefied. The process of teething is very slow, sometimes no teeth appearing for the first year or more. Rachitis is manifested in the lower limbs first, and then the bones of the pelvis and thorax become involved in the disease.

TREATMENT.—One of the first things to be done is to examine the milk which the child receives, and see whether or not it is of a healthy character. If the food is of a proper kind, and the disease still develops itself, the child should receive proper medical treatment. Small doses of cod-liver oil should be given in an emulsion, made with good Maltine. The carb. of calcium (calc. carb.) should also be ordered in small doses. Sometimes this may be alternated with calc. phosphate in small quantities. Very large, open fontanels, diarrhœa, and emaciation, are all indicative of rachitis. I had a case, this past summer, of a little child, with the characteristic diarrhœa, tardy teething, emaciation, curved spine and bowed limbs. I put it upon the calc. carbonate (the

white, flour-like substance between the inner and outer layers of the oyster shell), and very small doses of bryonia to tone up its liver and stomach. Under this treatment it improved rapidly, and is now healthy. It has cut some teeth, and its limbs are about natural in shape.

Osteitis; Exostosis.—Osteitis consists either in inflammation of the periosteum, of the bone itself, of its marrow, of its medullary membrane, or of all these together. It is often very tedious in its course.

CAUSES.—It often follows bruises, fractures and other injuries; or it may result from chemical influences. In some cases, it seems to have originated from a certain constitutional contamination, such as scrofula, arthritis, scurvy, syphilis, mercurial poisoning, or some suppressed chronic affection of the skin.

SYMPTOMS.—It generally begins with heavy, burning pain, which finally assumes a tearing character, especially where the periosteum is also affected, which is often the case. The pain is increased by night air, motion, pressure, or any light jar. The bone feels hot to the patient, and, if it is superficial, the skin and flesh of the limb soon participate in the inflammatory process. The general fever may not be very high.

TERMINATIONS.—This disease may result in *caries* or *necrosis*, and a large *sequestrum* may be thrown off, to be replaced, in favorable cases, by a new formation. I recently assisted in the removal of a large sequestrum from the ulna. We had, lately, in our surgical clinic, a case where there was a large sequestrum of the femur, which we succeeded in removing. Such cases often occur, and if these irregular pieces of bone are not removed, they become sources of great annoyance to the patient, and may prove fatal.

TREATMENT.—Where there is periostitis and enlargement of the bones, especially the tibia, with violent aggravations at night, daphne mezereum, in small doses, gtt. 1 to 2, three times a day, will be useful. If the disease is from the abuse of mercury, or from a syphilitic taint, gtt. 2 to 3, of nitric acid, three or four times a day, will give good results. After suppuration takes place, small doses of triturated silicea will be proper, say gr. 1 of the 1st dec. trituration, every three hours. Staphisagria is a valuable remedy in many cases where osteitis takes place in the phalanges of the fingers. This may alternate with Horsford's Acid Phosphate, in small doses. The phosphite of lime is a valuable remedy where caries or necrosis of the bone has taken place. Where this disease attacks the bones of the nose, face or head, the chloride of gold, in doses of gr. 1-50 three times a day, will do good service. Angostura, as a tonic, is often called for in this affection, especially in caries of the long bones. If this disease occurs in scrofulous constitutions, small doses of tincture

of asafœtida may be given in alternation with menesperum or aselli jecor. ol. If there are glandular swellings in scrofulous individuals, gtt. 1 to 2 of tinct. of belladonna will be required, three times a day. Where there is profuse suppuration and emaciation, small doses of the tinct. of cinchona must be given.

White Swelling.—Tuberculosis is a constitutional disease, but may localize itself, as it has often done, in different structures or organs of the body. When it attacks the joints, it usually appears on the hip, knee, ankle, elbow, or wrist-joint. It is a form of inflammation presenting a peculiar glossy, shining appearance, which has given it the name of "*White Swelling*." In the early stage the synovial membrane is highly injected, somewhat opaque, softened, and thickened in patches by fibrous exudation. There is generally an effusion of lymph, of a pale yellow color, and of a pulpy consistency. The articular cartilage presents a grayish, or dull whitish color, and is generally thickened, softened and partially separated from its connection with the bone. The cancellated structure of the bones is abnormally vascular, porous, humid, light and generally easily broken. In many cases its cells are distended with a yellowish tubercular material, of a semi-solid, osseous character. The ligaments are unusually red, tumefied and softened. The synovial fluid is increased in quantity, but not to any very great extent. As the disease advances the lymph gradually increases in quantity, and may be mingled with sero-purulent matter. The synovial membrane finally becomes destroyed to a great extent, and what remains, presents a muddy, opaque and ragged appearance. The cartilage is ulcerated, discolored, perforated, and partially detached from the bone. Large quantities of pus accumulate, sometimes thick, caseous, ichorous or sero-sanguinous. In some rare cases it may be thin and almost black, from the necrosed condition of the bones. If recovery takes place, the joints are generally left ankylosed, or firmly attached by new material to the surrounding structures. In time, an artificial joint may be formed, and admit of considerable motion, but it is rarely the case that the joints recover mobility. These are the characteristic symptoms of tuberculosis of the joints, its general pathological changes, etc.

Coxalgia.—Coxalgia generally attacks children from the third to the seventh year, but I have known it to appear in later periods of their life. Where there is a constitutional diathesis, it may be excited by excesses, injuries, exposure to cold, or by certain wasting diseases. It rarely attacks both hips at the same time, but may be complicated with psoas abscess, ophthalmia or pulmonary phthisis.

SYMPTOMS.—In incipency the patient is easily tired, and complains of a pain in the *knee joint, or its inner side*. which is much

aggravated by motion, causing the child to limp when walking. The pain is also worse at night, and may prevent sleep by spasmodic jerking in the affected limb. This pain gradually extends up the limb, and is frequently felt also in the *tendo achillis*, (over the instep), or it may shift from one place to another, and sometimes cease for awhile altogether. After some weeks, or even months, the pain is felt in the hip-joint, and is intense over the articulation, deep-seated, and of a rather dull gnawing character. During the second stage, when the pain has become very violent, the buttock becomes flattened, the gluteo-femoral crease disappears, the limb appears longer, the muscles waste away, the appetite becomes precarious, the bowels constipated, and there is more or less fever, and sometimes copious sweat. The patient now begins to show emaciation and debility, In the third stage suppuration takes place. This may be known by the increase of the pain on the slightest motion, by throbbing and a sense of tension; by an increased swelling of the gluteal region; by œdema of the subcutaneous cellular tissue, and a turged condition of the subcutaneous veins, by violent rigors, high fevers and copious sweats. The pus may work its way to the surface, which is indicated by a circumscribed blush over the pointing part, and by the distinct fluctuation of the part, which, when opened, gives vent to large quantities of pus. Or the pus may make its way internally, by perforating the acetabulum into the rectum, bladder or vagina, or it may collect in a sort of pouch, between the inner surface of the iliac bone and the soft parts of the pelvis bones. The limb is shortened from one, to one and a quarter inches, and the foot points either outwards or inwards. The neck of the femur is wasted away; sometimes the bone may be so destroyed as to allow the superior extremity to move about and attach itself in an entirely new position.

TREATMENT.—In the first, and even in the second stage, when pressure on the trochanter causes pain in the hip-joint, gtt. 1 to 2 of the 1st dec. dilution (not stronger) of *rhus tox.* should be given every two hours. As soon as hectic fever takes place, tincture of phosphorous may be given (2 dec. dilution), gtt. 1 to 2, three times a day. If there is congestion of the head, starting in the sleep, burning, stinging pain in the hip, gtt. 1 to 3 of tincture of belladonna may be administered with marked relief to the patient. In the third stage, where suppuration has commenced, the phosphite, or the hypophosphite of calcium should be given gr. 1 to 2 three times a day, to restrain the suppuration. Where there is suppuration and rapid caries of the bone going on, with glandular swellings, silicea, in doses of gr. 1 of the 1st dec. trituration, may be given three or four times a day. In cases where there is a free discharge of acrid pus, the iodide of arsenic will be of

material service in doses of 1–20 to 1–30 of a grain. I usually triturate gr. 1 with gr. 9 of sugar of milk, then put gr. 4 to 6 of this into $\frac{3}{4}$ of water, and give a teaspoonful four times a day, well diluted with water. I give, in the first stage, the tincture of menispermium, in doses of $\frac{3}{4}$ 1, three times a day, and anoint the joint with an ointment of polynnia uvedalia and oil of cedar.

Genu Album.—White swelling of the knee is from the same constitutional taint that gives rise to hip-joint disease, and runs nearly the same course. It is excited by an external injury in many cases, such as a fall, twist, or blow upon the knee-joint.

SYMPTOMS.—This disease generally begins with a severe, dull, heavy pain at the inner condyle of the patella or at the inside of the head of the tibia. The pain may be rather intermittent, and extend up and down the limb. Very soon interstitial deposits take place, and the joint begins to swell. The swelling is first confined to the front and sides of the patella, effacing the natural depressions in that region, and producing soft fluctuating sacs or bags instead of the usual depressions. Sometimes there is a considerable prominence just above the joint, over the lower part of the femur, bounded by the inferior portion of the patella, and on each side by the lateral ligaments, its anterior wall being formed by the tendon of the exterior muscle. The popliteal region rarely, if ever, swells. The skin over the swollen part is tense and glossy, and the subcutaneous veins become very much enlarged. The knee joint is stiff and the leg more or less flexed. The thigh soon becomes considerably atrophied. The ligaments weaken, and the deformity of the joint increases, owing principally to the displacement of the head of the tibia, which causes the muscles to draw the leg outwards. In some rare cases there is actual enlargement of the diseased bones. As the disease advances adventitious deposits take place upon the synovial membrane, and the synovial fluid is absorbed. The fluctuation, which marked the earlier stage, now disappears and the joint, now swelling largely, becomes firmer and more resisting, but still possesses some elasticity. In most cases, the diseased structure finally begins to suppurate, and the pus may be absorbed, or it may escape at different places about the knee forming numerous fistulous openings, and leading to caries of the bones, or to necrosis of the larger portion of the diseased tissue. The above disease must be distinguished from bursitis *house maid's knee*, on account of its frequent occurrence among female servants, from working in a kneeling position. It is distinguished from synovitis by its superficial nature and the regularity of the tumefaction. It may suppurate, or become chronic—a solid tumor.

TREATMENT.—If this affection of the synovial membrane follow a fall or blow, I give arnica, in doses of gr. $\frac{1}{2}$ to 1, every three

hours, while a diluted tincture is applied to the knee. If there is general fever, or in case the disease follow exposure to cold, the tincture of aconite, in doses of gtt. $\frac{1}{2}$, every half hour should be given, until the fever is moderated, then three or four times a day. If the disease follow a twist or sprain, rhus tox., in doses of gtt. $\frac{1}{2}$ to 1, should be given every two hours. I have cured some grave cases with these remedies, properly used. In scrofulous constitutions, the pure oyster-shell lime, in small doses, will be found a good remedy. I use the 1st dec. trituration, in doses of gr. 1 to 2, three times a day. Where suppuration has taken place, and the discharge is thin and acrid, and the openings are surrounded with pale spongy edges, which bleed easily, small doses of tincture of iodine will be of material service. After caries takes place, and when there are fistulous openings, and a cachectic condition of the system, silicea will be required. If there be a discharge of fœtid pus, and there is œdema of the limb, emaciation and exhaustion, tincture of arsenic, in doses of gtt. $\frac{1}{2}$ to 1, three times a day, will prove a good tonic.

CHAPTER XIX.

DISEASES OF THE NERVOUS SYSTEM.

Neuritis.—Neuritis may be of the *acute* or *chronic* form. Acute neuritis is usually produced by external injury, or some destructive process in the adjacent parts, such as sloughing, ulceration or cancer. It generally begins with chilliness, or an actual rigor, which is soon followed by fever, headache, pain and sleeplessness. In some cases a red line may be seen in the skin, indicating the course of the inflamed nerve, and the tissue through which it is distributed exhibits a very marked degree of hyperæsthesia, and a sensation of numbness and formication. The chronic form is characterized by paresthesia and more or less pain, with sensory and motor irritation, subsequent paralysis, and a painful swelling of the nerve itself.

TREATMENT.—Aconite in doses of gtt. 1 every hour, should commence the treatment, and be continued until the force of the fever is stayed. At the same time the course of the inflamed nerve should be rubbed with an ointment of *hypericum perforatum*. Hyperæsthesia, which is one of its most common attendants, will require special remedies. In many cases, belladonna alternated with aconite, will relieve this complication, or it may require rhus tox., sulphur, arsenic or euphrasia.

Neuralgia.—Neuralgia is a pain in the nerves. All pain, in one sense, is neuralgia—pain of a sensitive nerve, but this is not the sense in which the term "*neuralgia*" is used. It is an irritation in the course of one or several sensory nerves, which may exist in any part of the nerve, from its origin down to its termination, or over the whole course of the nerve. Not only is it felt where the inflammation exists, but in different places along the same nerve, and sometimes even throughout its entire length. This nervous irritation or pain, may result from a great many different things, hence neuralgia may be a symptom of numerous pathological conditions. Some structural changes of the nerves themselves, are occasionally found, especially in paralytical conditions of parts. Neuroma, or tumors of the nerves, may exist without neuralgia; and neuralgia may exist without a single trace of structural change. It is therefore very difficult to define the pathology of this affection, as it is often a mere symptom of very different conditions, such as *peripheral* or *central*. Peripheral causes are organic changes in the nerves themselves, or such as may occur in neighboring parts of the nerves, as in inflammation, caries, exos-

tosis of the bones, tumors and affections of the uterus, liver, ovaries, stomach and kidneys, all these may be causes of neuralgia. The general central causes are structural changes in the spinal cord and brain, and their membranes; such as softening, tumors, sclerosis, and morbid deposits, metallic poisoning, exposure to cold, miasmatic influences, all these may give rise to neuralgia.

SYMPTOMS.—One of the most marked symptoms is *pain* of a boring, cutting, tearing, excruciating character. It most commonly comes on in paroxysms, and is often felt running along the course of the affected nerve, and this pain is increased by touching the surface. There may also be spasmodic motions in those parts in which the sensory branches are distributed. The vaso-motor nerves may also be affected causing paleness of the skin, chilly sensations, flushes of heat, perspiration, or profuse urination. The special forms of neuralgia are, viz.: *cephalgia*, *hemicrania*, *nervous sick headache*, and *migreine*. Cephalalgia, or headache may originate from many morbid conditions of the system at large, and some constitutions are predisposed to it, and will have it after slight disturbances of the general health. Headache may be produced either by hyperæmia, anæmia, or hysteria. Rheumatism and many other pathological conditions may also be associated with it. The trouble may return periodically, that is, may come on in the morning and cease at evening. Sometimes it only attacks one side of the head, and sometimes it passes from one side to the other, or again, it may be confined to the top of the head, or to the occiput or forehead. Sometimes the pain is excruciating, and is associated with extreme nausea and vomiting of bile and slimy acid. Frequently the pain ceases when vomiting occurs, and sleep usually relieves it. Hysterical, anæmic and chlorotic women are very prone to cephalalgia, and so are literary men of weak constitutions. The use of tea, coffee and tobacco, and of all alcoholic drinks or fermented beverages, leads to this disease.

TREATMENT.—When the spells come on regularly, the tincture of *arnea diadema* in doses of gtt. 3 or 4, will often overcome them. Other cases yield to *belladonna* or *æthusa cyn.* in small doses, and such as are associated with vertigo, dimness of sight, and ringing in the ears, call for *argenti nitras*. If they are intermittent, and do not come on at any regular hour, quinine in gr. 4 to 5 doses daily, will generally cure it. If there is a throbbing pain of the occiput, I give *ignatia amara* in doses of gtt. 1 to 2, three times a day.

Tic Douloureux.—This form of neuralgia attacks one or another branch of the trigeminus or fifth nerve, enter the supra orbitalis or the infra orbitalis nerve; and hence the names, *neuralgia supra orbitalis*, *neuralgia infra-orbitalis*, and *neuralgia infra-maxillaris*. This form of neuralgia is generally confined to one

side, but may attack first the right and then the left side. The pain is generally paroxysmal, and very severe, sometimes shooting to the back part of the head and neck and down into the shoulder and breast. Again, the motor nerves are affected, causing convulsive action of the muscles of the face and eyes or trembling of the whole body. The vaso-motor nerves are also frequently affected, in which case, we have pulsation of the arteries, swelling of the veins, and redness, paleness, and heat of the face. If the ramus ophthalmicus becomes involved, we have injection and redness of the conjunctiva, and a free flow of tears. I have a patient who has this last complication every time neuralgia comes on. If the second branch is affected, there will be a watery and slimy discharge from the nose, and if the second and third branches are involved, there will be a free flow of saliva.

TREATMENT.—Where the patient is hot and feverish, or where the cheeks are red, and the pain very severe, gtt. 1, of aconite should be administered every half hour, until the fever is relieved. If the pain is of a tearing, cutting character (shooting from the side of the face up into the temples and ears, and then down into the neck), and is aggravated by motion or touch, and if it is attended by a deep flush of the face and twitching of the muscles of the face, the tincture of belladonna acts admirably in doses of gtt. 3 to 5, every four hours. If the eyes are puffed out, and there is burning, stinging pain, (worse at midnight) pale, distorted face, with the disease originating from miasma, gtt. 1 to 2, of the tincture of arsenic will be of material service, used three times a day, until the pain is gone. If the pain affects the stomach, gr. 5, of the subnitrate of bismuth, should be ordered and repeated in three hours, if it fail to give relief. If it occur in females about the menstrual flow, and this flow be excessive and the pain severe, I give chamomilla, in doses of gtt. 1 to 2, every half hour. If the pain exist in the infra-orbital and maxillary nerves, gr. 2 of quinia, will be required every two hours, alternated with tincture of colocynth. In orbital neuralgia, coming on in paroxysms, gelseminum, in doses of gtt. 5 to 10, every half hour, has acted finely with me in many recent cases.

Cervico-Occipital Neuralgia.—This rather uncommon form of neuralgia has its seat in the first four spinal nerves, and generally on one side, extending over the upper part of the nape of the neck and occiput, over the lateral region of the head, and towards the lower jaw in front. *Cervico-tracheal neuralgia*, is one form which attacks the whole tracheal plexus, shoulder blade and arm; *intercostal neuralgia* is yet another form, and has its seat in the dorsal nerves, sometimes affecting both sides of the chest, but most frequently located between the fifth and ninth intercostal spaces on the left side. It produces a sense of tension in the chest, which

gives rise to shooting pain when the patient attempts to expand that organ. The spinal process, where the dorsal nerves emerge from the spine, is tender, and pressure on it, increases the neuralgia. *Lumbo-abdominal neuralgia* has its seat in the lumbar nerves, causing there, and in the abdomen, pain which is increased by pressure over the lumbar vertebræ. This pain may extend to the inguinal region, to the symphysis pubis, and in females, over the crest of the ilium, to the vagina and labia majora. *Mastodynia*, or neuralgia of the mammæ in females, has its seat in the mammary glands, which often become very painful, although there is no external change of appearance. The pain may shoot into the axillæ, or into the back and down into the hips. It often occurs with some irregularity of menstruation, as menorrhagia, dysmenorrhœa, etc. It generally exists between the ages of sixteen and thirty years, but may occur later. *Neuralgia ischiatica*, affects the nerves supplying the nates and posterior part of the thigh. Sometimes it runs along the nerves of the bend of the knee, and along the fibula into the external part of the ankle and heel, and external part of the foot; occasionally the pain is only felt in the sole of the foot—*neuralgia plantalis*. *Crural neuralgia*, generally has its location in the crural nerve, in which case, the pain is felt in the lower and inner region of the thigh, the inner portion of the knee-joint, and the ankle, (on the inner side), possibly passing into the big and second toe. It may be caused by uterine tumors, cancers, inflammation of the hip-joints, crural hernia, or by anything that presses on the nerve.

TREATMENT.—The remedies mentioned in the treatment of the other local forms of neuralgia, as belladonna, aconite, arsenic, chamomilia and quinia, will be applicable here, under the same pathological conditions. If the neuralgia be caused by over exertion, arnica, in doses of gtt. 1, of the tincture, will give great relief, and may be repeated every two hours. For a throbbing pain in the hip, ignatia amara, in doses of gtt. 2 to 3 will be required.

Anæsthesia.—Anæsthesia originates from two pathological conditions: (1) from an *inability of the sensory nerves to convey* the external impression to the central organs; (2) from an *inability of the central organs to perceive* the impression. The first is the case where the nerve has been severed; and the latter may have its prime source in some diseased condition of the spinal marrow or brain, and is generally associated with paralysis of corresponding parts. The degree of anæsthesia varies greatly in each case; amounting, in some instances, to mere numbness or torpor, or, again, to complete deadness of the part affected. It is manifested by torpor of the capillary circulation; decrease in the heat of the part; dryness of the skin; œdema; livid color of the skin;

ecchymosis; and sometimes blisters filled with bloody serum appear on the toes and fingers.

Trigeminal Anæsthesia.—In this form of the disease the patient does not feel any irritation upon the affected parts; but when eating he does not taste anything in the affected side, and the saliva drips from his mouth without his knowledge. He does not feel a glass or cup when he puts it to his lips on the affected side. There may be, also, loss of sight, smell and taste. The reflex movements of the face are lost, the eyelids do not shut when the conjunctiva is touched, nor does irritation of the mucous membrane of the nose cause sneezing.

CAUSES.—The central causes are apoplexy, softening and tumors of the brain; peripheric inflammation; and softening, hardening and atrophy of the nerve and of the gasserion ganglion. Severing of this nerve or one of its branches, by a wound or surgical operation, or by wounding the nerve by severe blows, etc.; pressure upon the nerve by tumors or foreign bodies, and a fracture of the petrous portion of the parietal bone, may all give rise to this form of anæsthesia. These causes show the incurability of this affection, unless its cause be removed.

Morbid Affections of the Motory Nerves.—We have seen that the sensory nerves may be morbidly affected, either by an increase or by a loss of sensibility. So, also, may the motory nerves be affected by spasm, cramp, paralysis, and excess or deficiency of the nervous tone of the parts in question.

Spasms: Convulsions: Cramps.—Spasms may manifest themselves either as short, slight jerks of certain muscles; as violent, frequently repeated contractions of the same or different muscles; as hasty motions without purpose, repeated mechanically; as irregular, misdirected motions, or incoordinate spasms; as trembling, tremor or rigidity of muscles. Spasms differ in violence and extent, and not in proportion to the importance of the lesions causing them. Sometimes very grave lesions in the central organs may be attended with but slight spasms; and again, a slight reflex irritation may give rise to the most violent convulsions of a very persistent character.

CAUSES.—The causes of convulsions are various. Childhood is predisposed to this morbid affection of the nervous centres; the younger the child, the greater being its proneness to this disease. Any febrile or inflammatory attack in young children may be followed by spasms. Two special forms of spasms of this early age are eclampsia and trismus. As the child advances in years to the age of puberty, the tendency is to different forms of *chorea*, *stammering*, *squinting*, and likewise to the incipency of *epilepsy*. From the age of puberty to middle age there is a tendency or liability to *hysteria*, *epilepsy*, *eclampsia*, and *tetanus*; and in old age,

tremor and *writer's spasm* are most common. Females are more prone to spasms than males, generally speaking, and *ceteris paribus*.

EXCITING CAUSES.—Mental emotion, fear and sudden shock upon the nervous system through the mental sphere, will often provoke an attack of spasms. Diseases of the central organs and their membranes, as softening of the brain, encephalitis, myelitis, tumors, tubercles, inflammation of the cerebral and spinal membranes, and morbid processes in the bones encasing the central organs, are all exciting causes. Spasms are also caused by peripheric irritation of the nervous system, by strong, light, tickling, wounds, blows, bruises of some organs (as the testicles or the uterus), irritation over large surfaces (as the mucous membrane of the bowels by worms or indigestible food), conditions of the blood (as stagnation, loss of blood), and by qualitative changes of the blood in fevers, pyæmia, uræmia and cholæmia. Certain poisons, as alcohol, narcotics, strychnia, secale, lead and mercury, may also give rise to this trouble where there is predisposition to it.

PROGNOSIS.—The prognosis depends very much upon the causes. If spasms are the result of grave lesions of the internal organs, as they often are, they are of a grave character, but not so much so as when they arise from peripheric irritation. Spasms from blood-poisoning, as in uræmia, cholæmia, are always unfavorable in prognostication. When they appear in the beginning, or during the course of exanthematic fevers, it indicates that these fevers are of a violent and dangerous type. The prognosis, however, is not quite so unfavorable in children as it is in grown people.

Chorea.—Chorea consists in a spasmodic, involuntary agitation of single or several groups of muscles, preventing the regular voluntary muscular movements. These irregular movements usually abate during sleep, and any effort on the part of the patient to restrain them, only aggravates them.

SYMPTOMS.—These motions of the muscles sometimes extend to all of those which ordinarily obey the will, and again only affect certain groups of muscles, as those of the face, upper half of the body, or one side of the body. It may be that the arm of one side, and the leg of the opposite side, is affected with the disease. This morbid agitation, may first start in a few muscles, and gradually extend over the whole body. This gives rise to constant jerking, twisting, swinging, and sometimes very ludicrous sights. Intercurrent diseases have occasionally cured this one, but fever increases it. The reflex motions are not interfered with, for when the patient itches, he can scratch himself without hinderance, and can cough, sneeze, and evacuate the bladder and bowels with usual facility. The involuntary motions

of the body are free in their action, as the respiratory motion, the action of the heart, deglutition and the peristaltic action of the bowels. The sensibility is also natural. The mental faculties may remain intact for a time, but finally, they suffer from the long duration of the disease. The patient, at first, begins to show a loss of memory, then weakness in other mental faculties, and in some cases, marked imbecility of mind takes place, the disposition becoming irritable and peevish.

CAUSES.—Its predisposing cause seems to dwell in the age between the time of the second dentition and puberty. Mental emotions, fright, fear, and ecstasy, are exciting causes; and debility, from long continued disease, rapid growth, and the sudden suppression of cutaneous eruptions may also produce it. In some cases, no specific cause can be seen.

TREATMENT.—Agaric is indicated in cases that are attended with jerking of the muscles and frequent nictation of the eyelids. Belladonna should be used in cases that are attended with emprostotonos and opisthotonos. Caulophyllum, in small doses, acts well in young girls with irregular menstruation. If chorea occurs with rheumatism, cimicifuga, in small doses, will do good service, alternated with sticta pul. If the muscular motions are all over the body, and are attended by a melancholy mood, loss of memory and speech, or a disposition to pray, I give stramonium, in doses of gtt. 5, of the tinct. every two hours. Zinc and copper have been used successfully in some cases. If the spasms are the result of exposure to cold, belladonna, in doses of gtt. 4 to 5, every three hours, will generally arrest them readily. If not, I usually let the patient inhale about five drops of the nitrite of amyl, every half hour, until relieved of the spasm. The inhalation of chloroform has the same effect. If the spasms are caused by diseased bones, they are incurable. If they are excited by fright and terror, hyoscyamus, in doses of gtt. 5, every half hour, may be followed by relief. If not, ignatia amara, may be given in doses of gtt. 1 to 2, every three hours, alternated with gtt. 4 to 5, of tincture of gelseminum. Sometimes stramonium will give relief, especially where the spasms affect the eyes and their lids. If from softening of the brain, the phosphide of zinc, is the remedy, in doses of gr. $\frac{1}{15}$, three times a day, well diluted with water, or it will irritate the stomach. If the spasms are provoked by worms, I would give spigelia, alternated with santonin, $\frac{1}{2}$ 1 to $\frac{1}{2}$ of the first, and the last in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$, three times a day in sugar. For writer's or painter's cramp, belladonna will often be sufficient; but it may fail, nux vomica may then be tried, and if it fails too, ignatia amara may accomplish some good. It may be given in doses of gtt. 1 to 2, three times a day. In some cases, staphisagria does remarkably well in doses of gtt. 3 to 4, three

times a day. Gelseminum is *the* remedy wherewith to check the spasm.

Hysteria.—This is a protean disease, which seems to affect almost the whole nervous system, without any apparent anatomical lesion. It would seem to consist of excessive irritability, hallucinations, neuralgic pains in the sensory nerves, and often convulsions in the motor sphere; or the reverse—anæsthesia and paralysis. Hysteria most commonly attacks the female sex, and is frequently connected with diseases of the female genital organs. Nevertheless, it sometimes attacks the male sex. It generally appears among females between ten and thirty years of age. After the climateric period, its occurrence is very rare, although it may occur up to fifty.

ETIOLOGY.—A peculiar physical constitution, which consists in an emotional nature and a want of *will power*, together with abnormal conditions of the female genital organs, menstrual irregularities, excessive gratification of the sexual appetite, depressing mental emotions, disappointed love, jealousy, wounded pride, a guilty conscience, grief and anxiety, reading trashy fiction that excites the imagination, and disappointed ambition, may lead to it.

SYMPTOMS.—The symptoms are multitudinous, various, variable and very difficult to describe, for hysteria simulates a great many other diseases. Patients will often complain of a great many pains and aches that are hard to diagnose. The patient may have photophobia, a dislike to bright colors, or a dislike to bright flashes of light, sparks, and complicated figures. Subjects are liable to phantasms and visionary hallucinations, and some have a perverted sense of hearing, ringing in the ears, and roaring or hearing of voices, etc. There may be a perversion of smell and taste, and the sentient nerves may be so disordered that the patient complains of headache, tickling cough, pain in the larynx, soreness of the mouth and tongue, pain in the mammary gland or ovaries, in the chest or about the heart, in the stomach, in the external genital organs, in the bladder or urethra, in the coccygeal region, or in the back, and occasionally the feet. There may be anæsthesia of the sense of touch, especially in certain parts of the body. *Globus-hystericus* in the throat is a very common symptom; also spasmodic breathing, singultus, yawning, crying, laughing or screaming, spasmodic retention of urine, stricture of the constrictor ani, and local spasms about the head. Aponia may exist with hemiplegia and paraplegia. These last symptoms may last for years, in spite of all treatment, or may be relieved by some moral influence or change of condition. In some cases, there is palpitation of the heart, cold extremities, red face, hot head, etc. Again, there may be hæmorrhage from the nose, throat, stomach or lungs.

TREATMENT.—As hysteria is a functional disease, one very

potent agency is the psychical and moral influence of the physician over his patient. If the latter has no confidence in the attending physician, he had best retire and let another take his place, in whom the patient confides. A great many remedies have been recommended for this disease, from time to time, but none of them, with a few exceptions, have proven very successful. *Ignatia amara* is valuable in cases attended with a feeling of suffocation, *globus hystericus*, and convulsive crying or flatulence of the stomach and bowels. Camphor gives relief from a paroxysm, when used as snuff. Musk is an old remedy, and may be used in small doses of the tincture. If the condition is connected with uterine disease, *cimicifuga*, in doses of gtt. 20 of the tincture will aid other proper remedies. If there are spasms of the throat, I prescribe tincture of *assafœtida*, in doses of gtt. 30, every two hours, until relief is obtained. Some cases are benefited by *vervain*, alternated with *scutellaria*, in doses of gtt. 30 each, every two or three hours; but, in most cases, the *valerianate* of zinc is better. If constipation exist, *nux vomica*, in doses of gtt. 1 to 2 of the tincture may be taken at every meal. *Gelsemium* may be ordered while there are spasms of the face or any part of the body. It should be given in doses of gtt. 25 to 30, alternated with the bromides. *Canuabis indica* is also a good remedy where there are hallucinations.

Trismus: Tetanus.—Trismus and Tetanus are characterized by tonic contractions of the voluntary muscles. It may be several days before it fully develops from the injury that gives rise to it. The patient may have occasional chilly sensations and pains in the injured part; and these symptoms are finally followed by drawing pains of the neck, stiffness of the jaws, and difficult deglutition. All these symptoms gradually intensify, until finally the head becomes immovable and drawn backwards, the lower jaw becomes set, and deglutition still more difficult, or altogether impossible. This is called *trismus* or *lock-jaw*. The disease seldom ends at this stage, but very frequently this tonic spasm extends further, over all the dorsal muscles, down the sacrum, and over the muscles of the chest and abdomen, rendering the whole body as rigid as a stick. The muscles of the extremities, are not quite so badly affected, nor are the muscles of the face, but the eye-balls are often rigidly drawn towards the inner canthus, the eyes stare, the lips are drawn asunder and show the teeth, and the tongue is thrust out between the teeth, and often severely bitten. There is very frequently *risus sardonius*, that is in tetanus. This tonic contraction of muscles has intermissions, the rigidity yielding occasionally to a relaxed state. These spells of intermission however, soon give place to sudden and violent convulsive attacks of very great rigidity, and in this way the disease progresses with

alternate rigidity, and partial relaxation. So great are the contractions in some cases, that bundles of muscular fibres are severed, blood-vessels broken, and the blood extravasated in the parts thus violently affected. The following forms of tonic spasms have been recognized, viz.: *opisthotonos*, bending the body backwards; *emprosthotonos*, bending the body forward; *pleurothotonos*, bending the body side-ways; and *orthotosnos*, straightening the body. The most frequent form is bending the the body backwards, *opisthotonos*, caused by predominating effect upon the dorsal muscles. The other forms are exceptional. The will has no control over these spasms, and any effort to control them only increases the rigidity of the muscles. Occasionally the slightest touch or movement of the patient's bed, or a draught of air, will cause most violent convulsive concussions. The respiratory action is greatly disturbed, the breathing is carried on mostly by the diaphragm, and this function frequently becomes more and more difficult, until it finally ceases. There is always pain in the convulsed parts, and also in the pit of the stomach. The circulation is but little affected, and the pulse may be normal, or rather quicker than natural. The urine and feces may be retained, and singultus and vomiting be present. The brain is rarely affected, hence the patient suffers all the tortures of this painful disease, and this torture is all the worse from the fact that there is full consciousness of his situation. Sleep is generally impossible in tetanus.

Trismus Neonatorum.—Tetanus of new-born infants, presents the same features as the form of tetanus above described. It commences with stiffness of the jaws, and such difficulty in deglutition, that the child becomes incapable of taking the nipple in its mouth, the rigidity gradually extending over the whole body. *Trismus*, like tetanus, may terminate fatally in twenty-four hours, or it may last several weeks. If recovery takes place, it does so very gradually. The majority of cases prove fatal from suffocation, or from exhaustion and starvation.

CAUSES.—Wounding of the peripheric nerves of the skin and extremities, or of the face, head and genitals; and abortion and parturition, may all produce tetanus, in impressionable persons. Lesions of inner organs may also cause tetanus. Central irritations, from concussion of the spine and brain, hyperæmia of the cord or of its membranes, extravasation of blood within the spinal canal and the skull may give rise to this disease. Small punctured wounds made by nails, penknives, needles, splinters, or any small substance, are much more liable to produce tetanus than large cuts. Strychnia and brucia in large doses, produce tetanus.

TREATMENT.—If the circulation is much disturbed, gelseminum and aconite are excellent remedies, the former in doses of gtt. 25 to 50, the later in doses of gtt. 1 every hour, until the gelseminum

affects the muscular system. Belladonna is required in most cases where there is restlessness, twitching of the muscles of the face and limbs, inability to swallow, (in which case, atropia may be used by the hypodermic method), convulsions, spasmodic respirations, open staring eyes, and involuntary discharges of urine and feces, Cicuta is a valuable remedy where there is stiffness of the whole body, in doses of gtt. 1 to 2 every half hour until its effects are manifested, after that the intervals between the doses may be prolonged. Nux vomica in very small doses, is an important agent where the respiration is greatly disturbed, and may be given every hour, in doses of gtt. $\frac{1}{2}$. The tincture of calabar bean has been highly extolled by some late writers, and will doubtless prove a useful remedy. The tincture of phyostigma may be used in doses of gtt. 5 or 6, and if it fail to relax the muscles, I repeat in an hour. Esserine is also very good in very minute doses of gr. 1-6, or the extract in doses of gr. $\frac{1}{6}$. Dr. Fraser recommends the subcutaneous injection of this drug, repeating it until the muscular system is decidedly under its influence, and then maintaining the effect by administering the remedy monthly until the patient is out of danger. No rules can be laid down for the dose. It will vary in each case, from gr. $\frac{1}{6}$ to $\frac{1}{2}$ of the extract.

Catalepsy.—Catalepsy is a sudden loss of voluntary motor power. The patient falls suddenly, and all the muscles remain in precisely the same position as they were in when attack came on, making the patient appear like a statue. At first the muscles are rigid, but they very gradually grow pliant, so that they remain in any position, in which they are placed. The patient usually loses all sensibility and consciousness; and recollects and perceives nothing. Occasionally some sensibility still remains, and in some cases, both sensibility and consciousness are undisturbed. The patient sees, hears, feels, and knows everything transpiring around him, but has no power to move a muscle in his body. This disease, in the simple form, may end as suddenly as it began. The patient first takes a full inspiration, then sighs, yawns, and comes to, as if awakening out of a deep sleep. He often resumes his usual work without knowing what has befallen him. These attacks *may* follow one another in quick succession, and last but a few minutes. Graver attacks, however, last for hours and days. I saw one man who had these fits whenever very highly excited by religious revivals, and they lasted for several hours. I saw another case, that of a colored girl, which had been caused by religious excitement, and which lasted several days. Skoda mentions one instance where it lasted several months. Catalepsy may be combined with hysteria. It is often connected with ecstasy, St. Vitus dance, somnambulism and other nervous derangements.

CAUSES.—It is frequently caused by mental agitation, anger,

fright, sudden joy, grief, disappointment, vexation, ecstacy, and religious excitement when carried to excess.

TREATMENT.—When it results from anger, or vexation, chamomilla, in doses of gtt. 1 to 2, alternated with gtt. 1 to 2 of bryonia, will frequently be sufficient to check the attack. If it is caused by fright, let belladonna be alternated with St. Ignatius' bean, and these followed by gelseminum, in doses of gtt. 20 every three or four hours in the day. If caused by joy or grief, I give phosphoric acid, alternated with St. Ignatius' bean, in doses of gtt. 5, three or four times daily, until there is complete relief. If catalepsy results from disappointed love, gtt. 4 or 5 of tincture of hyoscyamus is an excellent remedy, given every three hours. If sexual erethism be the cause, stramonium will be the proper remedy, gtt. 5 every hour. If caused by ecstacy or religious excitement, I use stramonium, alternated with the tincture of sulphur, gtt. 5 each, three or four times a day, until it brings relief. If caused by obstruction to the catamenial flow, gtt. 5 or 6 of pulsatilla acts well alternated with senecio, $5\frac{1}{2}$, every three hours. When the cause is unknown, the tincture of cannabis indica, in doses of gtt. 4 to 5, three times a day, may cure the disease, and so artemisa vulgaris. Scutellaria is a good remedy, in doses $5\frac{1}{2}$ of the tincture.

Epilepsy.—This disease consists of chronic fits, which occur repeatedly, but in many cases, without exact typical regularity. They are characterized by a want of sensibility and consciousness, and are attended by *clonic spasms*. At first, these fits do not affect the mind in the intervals, but finally, the brain is attacked.

SYMPTOMS.—The disease is often preceded by severe headache, vertigo, dizziness, sparks floating before the eyes, roaring in the ears, trembling, nausea, a desire to empty the bowels and the bladder, sometimes chilliness, palpitation of the heart, dyspnœa and soreness over the stomach and abdomen. The *aura*—which is a sensation as if cool air was passing quickly up the limbs towards the head—comes over the patient just before the attack. The fit generally commences with a shrill, piercing shriek, and then the person falls violently to the ground unconscious. In many cases, convulsions, tonic or partially clonic in character, alternate each other in quick succession. These spasms are occasionally very violent, so much so, indeed, as sometimes to cause luxations of the joints or fractures. The tongue is often badly bitten, and sometimes the teeth are broken by the contractions. In some cases, extravasation of the blood upon the brain and its membranes takes place. The respiratory muscles are disturbed, and respiration is imperfectly performed, hence asphyxia and cyanosis may result, and the face and eyes may become much swollen. The saliva flows from the mouth, causing foam in the lips, which is often

mingled with blood. The urine and fæces may pass off involuntarily, and in some cases there are erections of the penis. The convulsions last two or three minutes or longer, and then relaxation gradually takes place. The patient rouses with, perhaps, a deep sigh, having no knowledge of his past condition. In a short time he falls into a deep sleep, which may last several hours, and after awaking from it, he resumes his former occupation. Frequently, however, delirium, agitation, or wild excitement follow the fits. This condition lasts but a short time, and then consciousness returns. The following may be put down as the characteristics of epilepsy, viz: falling to the ground suddenly, shrieks, and tonic contraction of the muscles—spasms, lasting from one fourth to one minute. The intensity of the paroxysms greatly varies. In some cases, it is very light, consisting merely of an *epileptic vertigo*. If this be the case, the patient does not fall nor have clonic spasms, but is unconscious for a moment, staggers, and trembles. If it attack the patient by night, while he is asleep, it passes off unnoticed by him. These fits occur quite frequently with some, and with others, only once in a great while. Sometimes attacks come on during the day, and sometimes by night.

SYMPTOMS.—Just before an attack, the patient becomes low spirited and morose, or grows excited and angry. Occasionally, patients are forgetful, stupid, lewd, and unmanageable.

CAUSES.—In some cases it is doubtless inherited, and in other instances is the result of improper marriages, as is the case with neuroses. The emotional, ecstatic, state of mind, produced by peculiarly morbid impressibility the result of reading fiction constantly, doubtless leads to this, as well as to other nervous diseases. Morbid changes within the brain and its membranes may develop epilepsy, and so may repeated irritations of the peripheric extremities of the sensory nerves.

DIFFERENTIAL DIAGNOSIS.—Impostors sometimes endeavor to deceive physicians by trying to simulate epilepsy, but by opening their eyes, and examining their pupils the truth will be at once known. If they are dilated by the disease, strong light will not contract them, but if the patient is feigning epilepsy, the pupils will then quickly contract when the light falls upon them.

PROGNOSIS.—When the attacks come on very frequently, and are very severe, with asphyxia, one sided convulsions, paralytic symptoms, long continued coma, delirium, mania, or great stupidity after awaking from the paroxysms, the disease is very apt to terminate fatally. Short attacks, which are light, and have very long intervals between each other and do not injure the health, indicate a more favorable condition, and when the attacks become less frequent and milder, then it is more favorable still. When the disease is inherited, the outlook is unfavorable.

TREATMENT.—To ward off an attack let the nitrite of amyl be inhaled, gtt. 5 at a time, from the palm of the hand. Nitro-glycerine is slower in its action, but more enduring than nitrite of amyl. It may be taken in doses of gtt. 10 of the 1st cent. dilution, or gtt. 1 of the 1st dec. dilution, and repeated, if it fail. *Artemisia vulgaris* is indicated when the fits follow each other in rapid succession. *Verbena hastata* (vervain) has made some cures in doses of gtt. 60 of the fluid extract. *Cocculus indicus* has also proved itself efficient in many cases. *Belladonna* is valuable for old or long-standing cases, and may be administered in doses of gtt. 3 or 4, three or four times in the twenty-four hours. For recent epilepsy in children, *ignatia* is a good remedy, in doses of gtt. 1 to 2 according to the age. The oxide of copper is useful in small doses, of gr. 1–30, three times a day. If the spells come on in females about the menstrual period, I order *caulophyllum*, in doses of gtt. 30 of the tincture three times a day, in the interval between the attacks. If epilepsy is attended by painful menstruation, *cocculus indicus*, in doses of gtt. 4 or 5, three times a day, will generally give relief. *Viscum alb.* is an old remedy that is worthy of more general use. The bromides, especially bromide of lithium and bromide of sodium, or ammonium, have often given relief from the attacks, for months, and sometimes made permanent cures. I usually give the bromide of lithium in doses of gr. 10 three times a day, gradually increasing it to gr. 20.

Acute Eclampsia: Puerperal Convulsions.—This disease is very rare during pregnancy, and occurs before the sixth or seventh month, in the proportion of only one case in five hundred pregnancies, or even less frequently. It occurs more frequently during the act of parturition, but seldom during the lying-in period. *Primiparæ* are the most subject to it, and it usually commences during the dilatation of the os uteri, just at the expulsion of the fœtus, or immediately after the expulsion. If it set in during the lying-in period, it is at the commencement of labor-pain. The convulsions in this disease resemble very much those occurring in epilepsy. If they occur during the pregnant state they are apt to cause abortion, and when at the commencement of labor, they are apt to retard and prolong it. If, however, they occur towards the end of labor, they generally hasten it. In many cases, after the expulsion of the child, the contractions of the womb cease, and hæmorrhage results. Retention of the placenta, and inflammation of the womb may also result from it. The convulsions seldom continue long after the birth of the child, but may in some rare cases; I know a case where they continued for life. Where the mother has puerperal convulsions about one-half of the children die. The later the convulsions, the greater the

chance for the child. The prognosis is doubtful in any case although many live.

TREATMENT.—Inhalation of chloform often suspends the spasms; and its influence must be kept up until the child is born. Where there are rapidly occurring spasms, with redness of the face, cerebral congestion, dilated pupils, and cold hands and feet, belladonna, in doses of gtt. 3 to 5, every three hours, will aid the chloroform. Aconite may alternate with belladonna, in doses of gtt. 1. Large doses of veratrum viride have been recommended for nausea and vomiting. When from reflex excitability, chloral hydrate will often ward off convulsions, if given in doses of gr. 15 or 20, just as the first indications of the spasms appear. The inhalation of gtt. 5 of nitrite of amyl, every half hour, will also ward them off, and often suspend them. If the spasms occur in labor, with a rigid os uteri, gtt. 25 of gelseminum should be administered and repeated every three (or two hours, if the spasms are severe), until the muscles are all relaxed, and the spasms relieved. The convulsions of children—"Eclampsia Infantum"—which often occur during the period of dentition, and from worms, may be cured by the removal of the cause, and by giving belladonna, gtt. $\frac{1}{2}$ to 1, every three hours, alternated with gtt. $\frac{1}{4}$ to $\frac{1}{2}$, of chamomilla. Gtt. 10 to 30 of the tincture of cypripedium and scutellaria, or half the quantity of the fluid extract, will give relief in most cases. Gelseminum may be required in some instances.

Paralysis Agitans.—This is tremor to a great extent, but differs from it in its increasing intensity, and in its tendency to terminate in paralysis and finally in death. The attack may commence with a feeling of weakness, with trembling motions of the limbs and head. These feelings may be mastered at first by the power of will, but finally increase in intensity, until the patient has no control over them, not even in sleep. The disease becomes so serious in some cases as to deprive the patient of the power of locomotion, and sometimes ends in complete paralysis and finally, in death, from exhaustion.

CAUSES.—The causes are rather obscure. It is supposed to have its origin in a morbid affection of the brain near the *corpora quadrigemina* and adjacent parts, or it may be caused by mental excitement.

TREATMENT.—Rhus tox. is one of our most trustworthy remedies, in doses of gtt. $\frac{1}{2}$ to 1, three times a day. If the attack is attended by any affection of the mind, as hallucination, or religious frenzy, I order gtt. 5, of the tincture of stramonium, three times a day. Small doses of the tincture of arsenic will often do good service. Phosphoric acid, (Horsford's Acid Phosphate) may be administered with benefit in many cases. The phosphide of

zinc where there is softening of the brain, in doses of gr. 1-10 or 1-15, three times a day; will often prove invaluable.

Paralysis.—Paralysis is the loss of the faculty of exciting the natural function of the motor nervous system and muscles.

CAUSES.—It may arise from destruction of, or functional incapacity of those parts of the cerebrum, or ganglia at the base of the brain, or of the cerebellum, in which volitional impulses are converted into motor excitations. It may also arise from loss or diminution of conductive power of the motor nerves, or it may originate from a want of excitability and contractibility of the muscles themselves. Wounds, occurring in the peripheral nerves, or in the brain and spine may also give rise to paralysis. Disease in the neighborhood of the nerves, such as exostosis, caries, aneurisms, enlarged glands, herniæ and tumors, are liable to produce it, and so too are neuritis myelitis, encephalitis, cerebral and spinal apoplexies, softening, sclerosis, and tumors of the brain and spine. Poisoning of the blood with vegetable alkaloids, such as nicotine, ergotine, woorare, saponine, hydrocyanic acid, camphor and also some metallic preparations,* such as lead, copper and zinc, are productive of paralysis. Typhoid fever, erysipelas, cholera, dysentery, acute articular rheumatism, diphtheria, syphilis and scrofulosis, may all be followed by it. Paralysis may affect a single muscle, or group of muscles. It may attack one-half the body, (hemiplegia), from a lesion in the brain on the opposite side, or from a spinal lesion. It sometimes affects both halves of the body symmetrically, usually commencing in the lower extremities and spreading from thence to the trunk and upper extremities (paraplegia). If the lesion exists in both hemispheres of the brain, there is generally paralysis of both sides of the body. Or with the most severe lesions it may be confined to the opposite side.

TREATMENT.—If there is a degenerative change in the brain and spinal cord, the tincture of phosphorus will do good service; given in small doses. If there is congestion of the brain and spine, gtt. 1 to 2, of belladonna should be administered every four hours until this symptom disappears. If paralysis is the result of softening of the cord, I use the phosphide of zinc in doses of gr. 1-5, alternated with gtt. 2 to 3 of tinct. of nux vomica. If the attack is connected with rheumatism, rhus tox. is a most valuable agent in doses of gtt. 1, three or four times a day. This drug is also the remedy for paralysis of the eyelids. It is one of our most powerful anti-paralytics. Cocculus indicus is also an efficient remedy for most cases of hemiplegia, paraplegia and general paralysis, but some cases are incurable by any treatment.

*Mercury may produce the affection.

Hydrophobia.—Hydrophobia, when it occurs in the human family, is an acute infectious disease, produced by a specific virus, almost always inoculated by the bite of a rabid dog, wolf, fox, cat, skunk, or horse; most frequently by that of a rabid dog. The latter has been known to produce this disease during the stage of incubation. Not everyone, however, that is bitten by a rabid dog will have hydrophobia. When the teeth go through the clothes, they may intercept the virus, and thus prevent the otherwise ill effects of the bite. It is estimated that only 8 or 10 per cent. of those who are bitten by rabid dogs, take hydrophobia and die of it. It does not require a severe wound to inoculate the poison, but a slight abrasion of the skin may readily absorb the virus. In fact, it is considered that very large wounds, which bleed freely, are the least apt to be followed by the disease. Wounds of the face are considered most fatal, and next, those about the hands. The wounds generally heal during the period of incubation, about two weeks, but may last from three to six months, and, in very rare cases, two years.

PREMONITORY SYMPTOMS.—The wound generally becomes inflamed, and assumes a reddish or bluish color. Severe, tearing pains are sometimes felt in the bitten part, or there may be a burning, prickling or boring sensation in the wound. Small blisters may appear under the tongue. The appetite fails, the head is apt to ache, the patient becomes very gloomy, and sometimes ill-natured, apprehensive, excitable, anxious and deeply concerned about his situation. He grows more and more restless, and sleepless, and dreads light and fluids. In the second stage, the patient has spasms of a paroxysmal character, which are easily provoked by an attempt to drink water, or by any sudden agitation or fright. These convulsions may be light or very severe, and of a clonic character. They are often associated with maniacal raging and strange hallucinations, causing the patient to snap at all who come near him. The spasms last from one half to three quarters of an hour. The patient can generally drink warm soups more easily than cold water, and better when he closes his eyes than when he has them open. There are intervals when the spasms cease for a time, and the patient is himself; but occasionally even these intervals are omitted, and he has, at best, a perverted imagination. In the third stage, or the stage of paralysis, the patient becomes very weak; the convulsions grow feeble, and finally entirely cease; the muscles twitch; the pupils are contracted; the eyes are fixed; the saliva is not ejected, but runs from the patient's mouth: the voice becomes very harsh and weak; the breathing short and rattling; the pulse small, irregular and rapid, and the skin is covered with clammy perspiration. Death may take place in from two to eighteen hours after the

third stage sets in, and is the direct result of a convulsion, or asphyxia.

PATHOLOGY.—One marked change, after death, is hyperæmia of the brain and its membranes, of the cord and its membranes, and of the lungs and kidneys. The sinuses and peripheral veins are generally much distended with dark, coagulated blood.

DIAGNOSIS.—It may be distinguished from *traumatic tetanus* by the intervals between the spasms. In the former disease, the spasms are continued. there is an increased reflex excitability, consciousness remains clear until death, and the organs of deglutition are unaffected; but in *rabies*, consciousness is often suspended, and the organs concerned in deglutition are very much affected. Prognosis is very grave in any case.

TREATMENT.—One of the most successful measures is *cauterization* of the wound at once, which stays the disease in 33 per cent. of those bitten by mad animals. The wound should first be well syringed out with salycilic acid, permanganate of potassium (saturated solution) or a saturated solution of boracic acid, and then dried with a sponge. It should then be cauterized with caustic potassium, and suppuration maintained for several weeks by dressings of resin cerate, and the occasional application of a solution of potassium to the wound. *Anagallis arvensis* and *convallaria majalis* have been highly recommended, and so has *scutellaria*. As soon as the brain becomes involved, *belladonna* is one of our best remedies, in doses of gtt. 5, every three or four hours. Dr. Gryzmala says that he has found the *xanthium spinosum* to be a positive remedy in *rabies*, in doses of gtt. 10 to 20. It eliminates the poison through the skin and kidneys. He says he has cured one hundred cases with this drug. It can be alternated with *belladonna* or the *anagallis arvensis*. It may be commenced in doses of gtt. 10 to 15, every three hours. It is worthy of a trial, as our remedies are scarce.

CHAPTER XX.

DISEASES OF THE SKIN.

Acne.—Acne, or *stone-pock*, is an inflammation of the sebaceous glands, caused by the retention of sebum. It is characterized by the formation of papules, tubercles and pustules. It may make its appearance upon any part of the body, except the palms of the hands and soles of the feet, but most generally appears on the face or nose. Acne may be complicated with other follicular diseases of the face, nose, or body. The disease consists of elevations about the size of a pin-head, or a pea, situated around the glandular orifices, attended by more or less inflammation. If this inflammation is superficial, the disease is apt to run a mild course, presenting only slightly reddened elevations, with, or without a central yellow suppurating point; this form is called *acne vulgaris*. When, on the other hand, the inflammation involves the glandular structures themselves, considerable disturbance may be occasioned, which may end in small abscesses and then cicatrices. This form is called *acne indurata*. A form of acne may prevail with anæmia or chlorosis. The acute form may run its course in a few days or weeks, but the chronic form may run on for years. It is mostly found in persons of light complexions, and usually commences about puberty, being believed to be associated with functional disorders of the sexual system. The severe forms may be produced by derangement of the digestive functions, and very frequently, it results from masturbation. The excessive use of iodide of potassium, will sometimes give rise to acne. The local use of tar may also produce this affection; and persons who handle tar are liable to an artificial acne on the hands.

TREATMENT.—The diet should be restricted; all stimulating, and highly seasoned articles of food and drink, being entirely prohibited. If there are *comedones* in the skin, they must be pressed out with a watch-key or extractor. Where there is inflammation, soothing applications should be employed, such as the ointment of the iodide of sulphur; adding 40 parts of rose water to 1 part of the iodide of sulphur. Large and painful pustules may be lanced, and indolent tubercles may be touched with the nitrate of silver or the chlorite of gold. Sometimes a solution of biniodide of mercury, 1 part, and emulsion of almonds, 50 parts, is valuable applied two or three times a day. *Rumex crispus*, strong tincture, may also be applied. The sulphide of potassium, 1 part, to the emulsion of almonds, 30 parts, is an efficient application. Lotions

of the sulphide of potassium, and the biniodide of mercury, are adapted to the indurated forms, the parts being well cleaned and softened with soap suds before applying these drugs. The juniper tar soap is, also, well suited to this disease, and salt baths render good service in some cases. Where there is a tendency to pustulation, small doses of ant. tart. may be administered, or the bromide of potassium, in gr. 1 doses. Where it follows onanism, and there are red pimples on the face, gr. 1-100 of chloride of gold, will act well, ordered three times daily. In the indurated form, with red, burning, gnawing pimples, surrounded with red areolæ, and leaving brown spots, *berberis vulgaris*, is useful, in small doses. In young, full-blooded persons, belladonna will often do great good, given in small doses of gtt. 2 to 3. Sulphide of calcium is applicable in cases where large, firm pimples appear on the neck. If pimples and pustules appear in groups of three or four on the face, I give *chelidonium majus*, in doses of gtt. 3 to 5, three times a day. If it occur in old scrofulous subjects, iodine is the remedy. *Juglans cinerea* is also efficient in small doses.

Alopecia.—Baldness is the absence of hair, either partial or general, and may exist as an accompaniment of a variety of affections.

Alopecia areata is a parasitic disease, which is characterized by the sudden appearance of white bald patches, of various sizes, either upon the scalp or in the beard. At times it affects the entire body. Occasionally it is unilateral, and it occurs mostly in young people. It may appear in patches not larger than a nickel, and then spread rapidly. Other spots soon appear elsewhere, and in a short time the whole side of the head may be devoid of hair, which comes out by the roots, leaving a smooth surface. Small downy hairs appear on the affected part in some cases, but they generally fall off. It is now demonstrated to be a parasitic disease, the spores, which are highly refractive bodies, being found among the epidermal scales.

TREATMENT.—Acetic acid 1 part, and glycerine 2 parts, may be applied thrice a day, or *rumex crispus* steeped in acetic acid, and then applied with equal parts of tincture of cantharides, will relieve this disease. As internal remedies I employ moderate doses of phosphorous and muriatic acid.

Icthyosis.—This disease is a congenital, chronic disease of the skin. It is characterized by a dry, harsh, dirty looking skin, generally covered with a species of furturaceous scales. When fully developed, the papillæ become enlarged, the discoloration of the skin becomes more distinct, and the epidermal scales are lozenge-shaped, and separated by numerous lines and fissures. In more grave cases, the scales form hard, dry, brittle plates of a yellowish or grayish color, separated by white intervening lines,

which mark the furrows of the skin. Occasionally, these scales become heaped up into black papillary, horny projections. The disease affects the whole surface of the body, especially the front of the knees, the flexures of the elbows, knees, and face generally escaping. The skin is very dry in ichthyosis, and in winter it is apt to chap the face and hands.

DIAGNOSIS.—As pityriasis is the only disease that resembles ichthyosis, they are easily distinguished, the skin being more or less hyperæmic in pityriasis, but not so in ichthyosis. Moreover, the scales in pityriasis are branny, and readily fall off, while those of ichthyosis resembles fish scales, and are firmly adherent to the skin.

TREATMENT.—The treatment of ichthyosis should be of a tonic character, as cod-liver oil, or chaulmoogra oil, internally and locally. The application of the *sapo viridis*, is also of much value in the local treatment. Internally, I find the iodide of arsenic to be one of the principle remedies. I use the 1st dec. trituration as follows: *arsenicum iodatus* 1st dec. trituration gr. 2; *aqua pura* ʒ 4, dose gtt. 60, three times a day. If there should be much itching, the above may be alternated with *clematis erecta*, in doses of gtt. 2 to 5 thrice daily. If the skin has a brown or dingy color, gtt. 3 to 5, of comp. tincture of iodine should be given three times a day, instead of the arsenic iodide. If the skin is dry and rough, like a hog's skin, the iodide of potassium may be ordered in small doses alternated with the hypophosphites of lime, sodium and magnesium in doses of gr. 2 of each, three times a day. If the skin looks dirty, gray and cadaverous, I order the tincture of *thuja oc.*, in doses of gtt. 1 to 2, three times a day. Washing the skin in an infusion of the bark of the *quillaya saponaria* also does much good. A generous diet should be allowed the patient, and the digestive organs should be kept in good condition; the kidneys being kept active. The skin should be daily washed in a warm alkaline solution, as the bicarbonate of sodium or the borate of sodium (ʒ 2, to a quart of warm water.)

Dermatitis Contusiformis.—This is an acute affection of the skin, which is characterized by oval or round purplish nodules, varying from the size of a hickory nut to that of the fist. The attack is usually ushered in by febrile disturbances; loss of appetite; malaise and erratic pains like those of rheumatism. The nodules are developed suddenly, and appear in crops. They feel firm and hard to the touch, and tender upon pressure, and are of a reddish or purplish color when first formed, becoming darker and softer in a few days. They generally appear upon the anterior surface of the leg, with their long diameters running lengthwise with the limb. In some cases, they appear upon the face and arms, and are marked upon a dark red periphery. These nodules never

suppurate, but disappear by absorption, fading away in color like bruises of the flesh. It generally attacks young persons, especially females; and is often associated with rheumatism and chorea. The trouble seldom lasts longer than two or three weeks, and tends to spontaneous recovery, although it may relapse in a short time. Dermatitis contusiformis is supposed to be due to embolism in the cutaneous vessels, and is somewhat allied to purpura. It is often followed by desquamation, and in young children appears between the folds of the skin around the neck and thighs.

TREATMENT.—A solution of the tincture of arnica (one-tenth per cent.) may be applied locally, upon compresses of lint, alternated with an infusion of hamamelis, applied the same way. If the disease is attended with a burning stinging pain, rhus toxicodendron, in doses of gtt. 1 to 2, every two hours, will relieve the severity of the inflammation. If there is œdematous swelling of the parts, and an inflamed erysipelatous appearance of the nodules, attended by stinging, burning pain, gtt. 2 to 5, of the tincture of apis mel., may be given every three hours until the pain and swelling subside. If the nodules assume a purple color, ptelea trifoliata (the tincture) may be used in doses of gtt. 20 to 30, every three hours. When it occurs on the thighs of infants, it is called *intertrigo*, and is often attended by diarrhœa. It should in this case, be treated with small doses of borax, and boracic acid should be applied (in the form of a saturated solution) to the parts affected. If the discharges from the bowels are of a greenish color, gtt. 1 to 2, of the tincture of chamomilla may be administered every three hours. If it appear behind the ears of infants, graphites (black lead) may be given, in doses of gr. $\frac{1}{8}$, three times a day. In strumous subjects, sulphur should first be tried for several days. If there is a tendency to acidity of the stomach, sulphuric acid, in gtt. 2 to 3 doses, will be found useful.

Herpes.—There are different forms of this disease but they are all characterized by an exudation, usually of a watery substance beneath the epidermis. This forms globular vesicles which are arranged in clusters upon an inflamed patch of skin and terminate frequently in the formation of a thin incrustation, without leaving marks or scars.

Herpes Facialis—This form of herpes appears on the face; when on the cheeks and upon the eyelids, it is called *herpes phlyctænoides*; and when it occurs upon the lips it is called *herpes labialis* or *hydroa febrilis*—fever blisters. This latter form frequently attends croupous pneumonia and intermittent and other fever, but it rarely ever occurs in the course of typhus.

TREATMENT.—The milder forms of herpes may be met by the local application to the parts of camphor cerate, calendula jelly, or

cologne water. Where there is much fever, gtt. 1, of the tincture of aconite, may be administered every two hours until the fever is subsided or lessened. In chronic herpes, the syrup, tincture, or the fluid extract of alnus rubra, may be given in doses suitable to the age of the patient. If there is a red herpetic coloring of the skin around the mouth, with a burning sensation, the tincture of arsenic may be administered in doses of gtt. 1 to 2, every four hours until there is decided improvement. For herpes zoster the local application of the tincture of hypericum, is sufficient.

Urticaria.—This affection is characterized by prominent, smooth patches upon the skin, the color of which is either redder or whiter than the natural color of the surrounding skin. They are elevated either in the form of round nodes, or long welks. These wheals are attended by an intense itching, stinging, and burning sensation. They vary in size, but are usually about the size of the finger nail, and are generally surrounded by an areola. They may be many in number, and most commonly are round or oval in shape. They are sometimes sore and sometimes hard to the touch, and when uncomplicated disappear without leaving any scar or mark upon the skin. This disease is called "*nettle rash*," from the burning, stinging, itching and tingling sensation, which is likened to the sting of the nettle. These wheals come and go suddenly, and are often excited by simply rubbing the skin. They are very liable to change of base. Urticaria may occur at any period in life, and may appear upon any part of the skin or the mucous membrane. It is mostly of an acute type, excited by some dietetic error, and generally lasts about five or seven days. Occasionally, however, urticaria appears in a chronic form. Sometimes an œdematous swelling precedes and accompanies this eruption. Again, an effusion of blood may take place into the wheals. An acute attack is generally ushered in with more or less fever, and more or less gastric derangement. The eruption appears suddenly, accompanied by severe itching, and may spread over the entire body. After the exciting cause is removed, the symptoms subside, and soon disappear.

CAUSES.—It may be caused by uterine diseases in females, and by intestinal irritation in children. Overloading the stomach, or the use of wine or highly seasoned food, will give rise to it in some constitutions. Oysters, lobsters, crab, mushrooms, sausage, eggs and strawberries may provoke this disease. Large doses of copaiba, cubebs, turpentine or valerian. will produce it in some habits. Urticaria is easily distinguished from any other skin disease. It bears some resemblance to dermatitis contusiformis, but lacks the livid color of that affection. The intense itching of urticaria will at once distinguish it from dermatitis contusiformis.

TREATMENT.—If excited by an overloaded stomach, an emetic of ipecacuanha should at once be given. If from improper food, the diet must be properly selected to suit the patient's digestive powers. Warm vinegar and water lotions may be applied to allay the itching. A mixture of chloroform and cream, (3 2 of chloroform to 3 4 of cream) applied on fine cloths, will also ease the itching. Gtt. 1 to 3 of rhus tox. administered internally, often cure this disease in one or two day's time. Gr. 5 or 6 of benzoic acid to 3 3 or 4 of rose water are often of material service, and a solution of 3 1 of the tincture, or fluid extract of grindelia to 3 5 or 6 of water, will often readily assuage the itching and stinging sensations. Sometimes gr. 2 of carbolic acid in 3 ½ of glycerine (this to be combined with 3 2½ of water, and applied to the diseased surface), will be of material benefit. The Turkish bath may be employed, if the above applications fail. Should the disease be confined to the thighs, the tincture of allium cepa. in doses of gtt. 5 to 6 every hour, will aid the cure. Anacardium is recommended by some writers. If the eyelids look puffy, the tincture of apis mel. should be given in doses of gtt. 3 to 5 every two hours until it affords relief. If the wheals are on the face, and of a scarlet color, with burning and stinging pain, I use the tincture of arsenic in doses of gtt. every three hours until it gives relief to the pain. If there are dirty, yellow blotches scattered over the legs, and attended with burning sensations, very small doses of the chloride of gold and sodium may be given three times a day. If there is a bright scarlet redness of the wheals gtt. 3 of belladonna every four hours, will give relief in a few hours.

Eczema.—Eczema is a catarrhal inflammation of the skin, running through the stages of erythema, papulation, vesiculation, postulation, incrustation, and squamation, and is characterized by the presence of a discharge of the consistency of stiffening linen. It may commence abruptly or come on very gradually, and may run its course in a few weeks, or it may become chronic and last for years. Sometimes it consists in a diffuse, superficial dermatitis, which causes numerous little vesicles upon an inflamed, irregular surface, and in some cases there may be pustules intermingled with the vesicles (*impetigo*.) Again the exudation may not be abundant enough to raise the epidermis into vesicles, but only sufficient to slightly loosen it, so that dies off and forms a scaly surface. Perhaps the epidermis is actually thrown off, leaving a raw, moist surface behind (*intertrigo*), which occasionally becomes covered with a thin scurf, with a thick crust.

CAUSES.—Eczema may be caused by direct irritation of the

skin, by heat, or wet bandages, or it may arise from stasis of the venous capillaries. As this disease occurs most frequently on the lower extremities, so consecutive eczema takes place in the form of *salt-rheum*. In many cases, however, we cannot trace the disease to any particular cause. When it attacks the scalp, it is called *tinea furfuracea*; and if it peels off in the form of thin asbestos-like layers upon the inflamed surface, it is called *dandruff*. The disease may also form thick crusts, and thereby mat the hair together, in which case it is called *tinea cavitis*, or "scald head." In children, it is apt to pass rapidly through the erythematous and vesicular stage to the pustular stage, in which greenish-yellow crusts are formed, covering a red and cracked surface beneath. When it appears on the face of children it is called *crusta lactea*. If it attacks the ears, it is attended with considerable inflammation and swelling, and sometimes abscesses. If it appears in the axilla, enlargement of the axillary glands is apt to follow, and it may result in abscesses. If upon the nipple, it is liable to be accompanied by severe pruritus, and a copious discharge of yellowish serum. If it exist upon the genital organs, there is generally considerable heat, redness and moisture. If upon the arms, legs, thighs or feet, it proves very obstinate, and is always attended with intolerable itching. If in the flexures of the joints and the clefts of the nates, it is apt to be of a severe and protracted type. When upon the hands and feet, it frequently assumes the fissured form, with but slight exudation and crustation.

Chronic Eczema.—This disease may start in a chronic form, or may be preceded by acute or subacute symptoms. If the chronic form attack the head, it is apt to cause dropping of the hair. Scrofulous or lymphatic persons, or women at the menopause, are very apt to be troubled with chronic eczema. Sometimes it attacks the ears and eyebrows, and may then produce a thickening of the skin. If it appears on the chin, cheeks and upper-lip, it is very intractable; and the parts will probably become infiltrated, and are often covered with bran-like, exfoliate scales all the time. This disease constitutes about thirty to forty per cent. of skin diseases in many localities, traveling from head to foot, as age advances. It is most likely to attack the head of infants, the trunk of youths, the genitals of adults, and the lower extremities of very old people. The excessive use of mercury, croton oils, cantharides, mustard, rhus toxicodendron, and rhus venetta, and analine dyes and strong soaps of potassium will also provoke this disease. It is due to want of tone in the nerves, by which cell proliferation and capillary congestion, with their consequences, are produced. Eczema is developed as follows; an exudation of serum takes place from the congested vessels which floats the over-supply of

new cells, and the two push on to the rete from the papillary layer, separate the cell elements of the stratum Malpighii and stratum lucidum, and uplift the cuticle so as to form first papules, and then the vesicles.

DIAGNOSIS.—In the erythematous stage eczema may be confounded with erythema, but the subsequent course of the disease soon disperses all doubt. In the papular stage, it somewhat resembles lichen. This disease affects the outside of the limbs, and is decidedly a plastic inflammation, while eczema is of a serious character. In the vesicular stage, eczema resembles herpes zoster, and scabies, but the vesicles in herpes are larger than those of eczema, and appear mostly upon the face and genitals. Eczema is never attended by the characteristic neuralgic pain of zoster nor does the eruption follow the course of the nerves. Eczema is not attended by the mighty itching, so common with scabies, nor is it accompanied by acari, which are readily destroyed by parasitical treatment. It may be mistaken for impetigo in the stage of incrustation, but the crusts of impetigo contagiosa, are superficial and appear as if stuck on, while those of eczema are greenish yellow, and adhere firmly. In the squamous stage, it may be confounded with psoriasis, seborrhœa, dermatitis exfoliativa, and the foliaceous variety of pemphigus; were it not that psoriasis has no discharge, and its scales are *silvery white*. The scales of seborrhœa, also, look oily and are larger than those of eczema, and dermatitis has large, thin, and easily detachable scales in flakes, which when loosened, leaves a dry, reddish glazed surface. Foliaceous pemphigus starts from *bullæ*, and the scales appear thick and parchment-like. These peculiar appearances must be noticed in the diagnosis.

TREATMENT.—The diet should be well regulated, pork, pastry, and all stimulating drinks, being strictly forbidden. As local remedies, bran washes and poppy fomentations, or emollient poultices of marshmallow, boiled starch or linseed meal, may be used at the outset to allay irritation and inflammation in the parts. In cases where there is but slight inflammation, the parts may be dusted over with the oxide or carbonate of zinc and starch in equal parts. Glycerole of tannin sometimes also answers well. If there should be severe itching, I use of carbolic acid gr. 5; glycerine $\text{ʒ } \frac{1}{2}$; water, $\text{ʒ } 4\frac{1}{2}$; applied three times a day on lint. I find *grindelia robusta* (tincture) very useful with glycerine, aa $\text{ʒ } 4$ and bran water, $\text{ʒ } 16$, mixed, and applied as often as required to keep the parts moist. Pyroligneous oil of juniper, $\text{ʒ } 2$; olive oil, $\text{ʒ } 4$, mixed and applied three or four times a day, is an excellent remedy. I sometimes use borax, gr. 20; lime water, $\text{ʒ } 4$, mixed and applied as above, three or four times a day. All these are applicable in chronic cases, or after the inflammation subsides. If

there is great dryness of the skin, the oleates are the best remedies we have, as the benzoated oxide of zinc ointment. It only protects the parts from irritation. Chrysophanic acid, in the form of a cerate, is a useful application in the squamous stage. An ointment of dulcamara, is also valuable in some cases. The oil of cade, and the oil of juniper, are the most useful drugs in the chronic form of eczema. The pyroligneous oil of juniper, or oil of cade, may be mixed with equal parts of olive oil. If there is much infiltration, the oleate of tannin, is very successful, made by triturating and boiling $\frac{3}{4}$ 1 of tannin, in $\frac{3}{4}$ 6 of oleic acid, to be applied twice a day after cleaning the parts well. One part of *sapo viridis*, and two parts of alcohol, is often of material benefit as an application. The oleate of litharge, applied on linen cloths, also gives excellent results. The internal remedies are the following, according to the respective indications. Aconite, in the simple forms of acute eczema, where there is more or less fever, and small doses of aluminium, where there are hard crusts on the arms and scalp. If the disease is in the bends of the limbs, with excoriations between the legs and about the anus and genitals, carbonate of ammonium may be ordered in doses of gr. 2 to 3. If the disease attacks the face, head legs, and genitals, which itch very much at night, the tincture of arsenic acts well in doses of gtt. 1 to 2, three times a day. The carbonate of barium is also a valuable remedy in cases attended with moist crusts on the scalp, swelling, and induration of the glands, and in fat or lymphatic children. In the inflammatory stage, if there is a deep scarlet redness of the face, small doses of belladonna are invaluable. Sulphide of calcium is often a useful adjuvant. *Clematis erecta* is very useful in moist eczema, when it occurs about the neck and on the head. Dulcamara is very applicable where there are thick brown, or reddish brown crusts on the forehead and chin. Where there is a tendency of the skin to crack open, and the cracks look ragged, graphites, in small doses (not more than gr. 1-10) will aid in the cure, especially if the disease be located about the ears. *Hydrastis canadensis*, in doses of gtt. 10 to 20, of the tincture, is a valuable remedy where the digestion is feeble. In some cases of eczema of the face, *iris versicolor*, in doses of gtt. 3 to 5, of the tincture, does good service. If there is a dry, grayish white crust, or an offensive eruption on the head of children, syrup of *arctium lappa* (burdock) is a valuable remedy, and often cures this form of eczema. The iodide of arsenic, where there is a syphilitic taint, is often absolutely required. It may be given safely as follows: iodide of arsenic, gr. 2: sugar of milk, gr. 18. triturate and add $\frac{3}{4}$ 4, of water. A teaspoonful of this mixture may be given three times a day. Where there is burning and itching of the vesicles upon the cracked surfaces, with a greenish discharge, stiffening

the clothes, the tinct. or fluid extract of *juglans cin.*, in doses of gtt. 3 to 10, according to age, has proven a valuable remedy. Moist eczema of the genitals, or where the hands and feet are cracked and rough, calls for the local application of petroleum. *Piper methysticum* is a valuable remedy where the skin is dry, scaly, cracked and ulcerated, especially on the feet and hands. In the acute stage, with small, yellow vesicles, red areolæ, and itching at night, *rhys toxicodendron*, in doses of gtt. 1 to 2, every three hours, has proven a valuable remedy in my hands. *Sepia* has seemed to be efficient in some cases. *Staphisagria* is a valuable remedy where there is an offensive discharge oozing from under the crusts. Small doses of sulphur prove most potent in some old chronic cases, especially where the eruption is dry and scaly. The dose is gtt. 5. In some cases the *viola tricolor* is a good remedy.

Impetigo Contagiosa.—This is an acute inflammatory affection of a contagious character, occurring mostly in children. It is characterized by one, two, or more discrete vesicles or vesico-pustules, which are generally umbilicated, vary in size from that of a split pea to a hazel nut, and are followed by flat, large, straw-colored, fungoid crusts. It may be ushered in with more or less fever, and in that case the eruption quickly follows. It appears in crops of small vesicles, which gradually develop into vesico-pustules. These vesicles which are small at first, grow rapidly, until they attain the size of a hazel nut. They are generally umbilicated and contain a lymph-like fluid with granular, and subsequently, pus cells. They are usually surrounded to a greater or less extent, by red areolæ. The fluid contents of these vesicles begin to dry up in about four or five days, and finally form flat shaped, *straw colored* scabs about the size of a split pea or hazel nut, which look as if they had been stuck on. The most common seat of the eruption is upon the forehead and cheeks, but occasionally it extends to the arms and head, and may implicate the mucous membrane of the eyes, mouth and nasal fossæ. This disease was first described by Tilbury Fox, in the year 1864. It occurs mostly in children of the poorer classes, but the better-to-do and the rich are also liable to it. It may be epidemic, but most commonly occurs sporadically. It is also contagious. It tends to run a definite course and usually lasts for one or two weeks. In some localities, it constitutes about one per cent. of all skin diseases. Vaccination will sometimes produce this disease. It is not considered a parasitic disease, in as much as no fungus, similar to that observed in vaccine crusts, has, as yet, been found in the fluid of this affection, or in the vesico-pustules of the disease.

DIAGNOSIS.—In the first place, we must bear in mind that this disease occurs mostly in children, and that it is preceded by more

or less fever, and consists of isolated vesicles, which are usually umbilicated, and about the size of a split-pea, or larger. They are mostly situated upon the face, and generally follow in the wake of vaccination, presenting scales that appear to be *stuck on*. We need not mistake it for any other disease. It is most liable to be confounded with eczema and varicella. It may be distinguished from eczema by the fact that the children attacked are usually healthy, while those with eczema are not healthy; moreover the scabs look as if stuck on, and are of a light yellow color and lie flat on the skin. The scabs of eczema, on the contrary, are of a greenish, yellow color and adherent. Impetigo is confined to the face and upper extremities, while eczema attacks any part of the body. It may be distinguished from varicella by the smaller vesicles and different crusts of varicella, and by its constitutional disturbance.

TREATMENT.—Crude antimony is one of the first remedies in this disease, gr. 1 of the first dec. trituration (of the homœopathic pharmacy), three times a day, Euphorbia is indicated where the skin is irritable, dose gtt. 1 to 2, of the tincture every three hours. Bichromate of potassium in doses of gr. $\frac{1}{6}$ to $\frac{1}{4}$, three times a day, is next in value to crude antimony. When the disease is quite pustular, small doses of tartar emetic will be found to do good service. When eczema follows vaccination, thuja oc. in doses of gtt. 3 to 5, every three hours, will be of material service. The nitrate of potassium may be called for, where there is much fever at the beginning. In vigorous subjects, where the fever is considerable at the outset, gtt. 1 of tincture of aconite may be given three or four times a day, until the fever subsides. If the skin is very irritable, it may be anointed with 5 parts of olive oil and 1 part of oil of cade, after washing well with soap suds.

Ecthyma.—This disease consists of large, isolated, painful pustules, situated upon hard and inflamed bases, and followed by brown crusts. These pustules are oval or roundish, flattened, of a yellow or yellowish color, and are surrounded by a red areola. The disease is generally preceded by a slight fever. After a few days these pustules dry up and form flat, dark brown crusts, which, when removed, leave extensive excoriations, which finally develop into temporary pigmented scars. This disease may occur at any stage of life; and usually attacks those who are badly nourished. It most frequently appears on the neck, shoulders and back. It is a superficial lesion, and rarely extends beyond the papillary layer. It may be confounded with eczema and impetigo contagiosa, but is more apt to be mistaken for the large, flat, *pustular syphilide*. Ecthyma, however, develops more rapidly, gives rise to more heat and pain, and presents slight ulceration and brownish crusts; while the *syphilide* shows an ulcer more or

less deep, with abrupt edges, and blackish, instead of brown crust. The disease may become chronic, and may then be protracted for an indefinite time by successive crops of pustules.

TREATMENT.—The treatment of ecthyma must be inaugurated by local applications. The affected parts may be anointed with a white precipitate ointment, say gr. 3 to $\frac{3}{4}$ 1 of simple cerate. After the pustules burst, if the ulcers show but little tendency to heal, a weak solution of carbolic acid may be applied; gr. 2 to $\frac{3}{4}$ 3 or 4 of water will generally be sufficient to heal them. One of the best internal remedies is the triturated crude antimony (1st dec, trituration, in doses of gr. $\frac{1}{2}$, every three hours), especially where the scabs are of a dark brown color. If the pustules are red or white, with an intense burning sensation, with thick crusts, arsenic is indicated, and may be given in doses of gtt. 2 or 3, of the tincture, three or four times a day, until the patient is decidedly better, when it must be discontinued. If the pustules are all over the body, and resemble those of small pox, the bichromate of potassium is the remedy, and may be given, in doses of gr. $\frac{1}{4}$, every two or three hours, dissolved in a wineglassful of water. If the pustules are on a very red base, and itch and sting, gtt. 1 to 2 of rhus toxicodendron should be given every three hours. If the pustules are large, tartar emetic, in doses of gr. 1-8, may be given every two hours.

Pemphigus.—This disease is characterized by large, isolated bullæ or blisters upon a red, inflamed, but not infiltrated surface. The blisters are quite large, and are filled with clear serum, greatly resembling those caused by a scald or burn. These blisters vary in size from that of a pea to that of a hickory-nut, and even that of a walnut. This disease is almost always in a chronic form. There are two varieties of it, viz.: pemphigus foliaceus and pemphigus vulgaris. Pemphigus vulgaris generally appears on the limbs, especially on the ankles. Occasionally it attacks the mucous membranes and other parts of the body, but this is rare. The blisters or bullæ are rounded or oval, and rise abruptly from the skin (sometimes to the height of a centimeter or more), and may be attended by slight itching. The contents of these swellings are at first colorless, but later they become cloudy or milky. They usually appear in successive crops, each bulla running its regular course in four or five days. Acute pemphigus is most commonly found among children, rarely in adults. It runs its course in from three to six weeks, but its subject is very prone to relapses. Pemphigus foliaceus generally attacks the body, and, though an uncommon disease, frequently proves fatal when it does occur. This form usually commences with the appearance of a single flaccid bulla on the sternum, which spreads over the whole surface of the body. The bullæ differ from those of pemphigus vul-

garis, in that they do not become tense, but remain flaccid, and when they dry up, form yellow, parchment-like flakes, which vary in size from one to four centimeters.

TREATMENT.—The patient should take exercise in the open air, and have a liberal animal diet, as beef, fowl, fish, eggs, etc. As local remedies, bran, starch or gelatine baths, are of material aid in the cure. As an internal medicine, *rhys toxicodendron* is one of our best remedies for acute pemphigus, and in the chronic form of the disease, arsenic is a most valuable remedy. I prefer the simple tincture, in doses of gtt. 2 to 3, three times a day. In the foliaceous variety, *thuja oc.* is oftener indicated than any other drug, the saturated tincture being given in doses of gtt. 3 to 5, every three or four hours. If the blisters itch very much, the muriate of ammonium should be ordered, in doses of gr. 1 to 2, three times a day. Where there are watery vesicles on the palms of the hands, which are very painful, I find gtt. 3 or 4 of tincture of belladonna very useful, given every four hours. Phosphoric acid (Horsford's Acid Phosphate) may be administered in small doses, as a tonic, *ter die*.

Rupia.—*Rupia* consists of bullæ, containing a purulent reddish matter, which gradually dry and form a thick, dark crust. Underneath this thick crust, matter continues to form, which again dries, and consequently raises the centre of the crust, while on the periphery it becomes encircled by a vesicated border, which also dries up into a crust. This accumulated matter, when dried up, resembles an oyster-shell, and, on removing the crust, a deep, foul, excoriating ulcer will be seen. *Rupia* is a late and malignant manifestation of syphilis.

TREATMENT.—The biniodide of mercury is one of the most trustworthy remedies, united with the iodide of potassium as follows: biniodide mercury, gr. 2, iodide of potassium 5 2; mix well, and add to aqua 3 8—dose, a teaspoonful thrice daily. This is an active preparation of iodine, and the mercurial will not remain in the system, as other preparations of that metal are known to do, to the great injury of the patient's future health. This preparation does its work, and is then eliminated with the iodide of potassium. As a vegetable alterative, the fluid extract of *berberis aquifolium* (prepared by Parke, Davis & Co., Detroit, Mich.,) is a valuable addition to the compound iodide given above, and may be given in doses of gtt. 30, every four hours. The iodide of arsenic is also a valuable remedy, provided the above fail to improve the condition of the patient in ten or fifteen days. It may be used in doses of gr. 1-50, three times a day.

Faruncle.—Faruncle, or boil, is a circumscribed inflammation of the skin and connective tissue, which varies in size from that of a pea to that of a hickory nut. It always has an indurated and

inflamed base, and commonly terminates in suppuration and the formation of a "core." A boil commences as a small, round, inflamed spot, painful to the touch, and surrounded by a bright red areola, which changes to a purple color as the disease advances. It gradually increases in size, and becomes more and more sensitive to the touch, the pain increasing in intensity and becoming throbbing. In about five or seven days the swelling suppurates and throws out a central slough called a "core." In rare cases, however, no core forms, and it is then called a blind boil. As soon as the discharge of pus takes place, the pain is reduced and the inflammation quickly subsides. Occasionally one boil follows another in quick succession until a number have come and gone. Faruncles may attack any part of the body, but generally appear on the face, back, neck, knees and gluteal region. They are doubtless owing to disordered states of the blood. I have seen the free use of the common blackberry produce boils in a large family. They are more apt to attack children and young persons than old persons, although the aged are not entirely exempt, for I have seen them appear on old people, and become a great source of suffering to them.

TREATMENT.—The usual treatment is to lance the boil, but this is not a good plan if done too soon, for the early use of the lancet always increases the inflammation, and very much retards the healing process. The first thing that I do, is to try to abort the boil by painting it with Lugol's solution, or the tincture of iodine. I have often thus aborted them. If I fail, I apply a lotion of arnica, aconite and hamamelis in equal parts. If the gatherings are of a dark red color, and very painful, gtt. 3 or 4 of the tincture of belladonna should be ordered every three or four hours, and a poultice of honey and flour applied to promote suppuration. Where there is predisposition to boils, the patient should take sulphide of calcium, carb. of calcium or sulphur. *Phytolacca* is also an efficient remedy, in small doses.

Carbuncle.—Carbuncle is a phlegmonous inflammation of the skin, characterized by necrosis of the cellular tissue, suppuration, and finally, discharge of the necrosed masses, (usually called cores), with pus, through sieve-like openings upon the top of the carbuncle.

SYMPTOMS.—A carbuncle usually commences with severe burning pain in the affected part, and more or less general fever. As the disease advances, if not aborted, the part swells, and assumes a purplish color. The gathering is sometimes as large as a saucer, and again not larger than a fifty cent piece. At first, small openings are seen, and then the whole mass gradually sloughs away, leaving an ulcer with inverted edges which granulates very slowly, and when healed, leaves a permanent cicatrix. It appears on the

neck, shoulders, back, forehead or buttocks, and is sometimes mild, sometimes very severe, and finally, fatal.

TREATMENT.—At the beginning, the carbuncle should be painted with the tincture of iodine three times a day, and this may abort it. If it goes on however to sloughing, the ulcer should be dressed with carbolic acid and glycerine, equal parts, or if too painful, 1 part of carb. acid to 2 parts of glycerine. Arsenic is useful internally, in doses of gtt. 1. If very painful, belladonna may be given; dose gtt. 2, *ter die*.

Malignant Pustule.—This affection is sometimes called carbunculus contagiosus. It is characterized by a severe pustule, associated with a gangrenous destruction of the surrounding parts, which pustule owes its origin to a direct inoculation of the poison from an animal affected with the disease called anthrax, milzbrand or carbon. It may be caused by transmission of the poison by flies, by inoculation of the poison from man to man, or it may originate from eating the flesh of diseased animals. It is oftener found among persons who have the care of diseased animals, or among those who work in manufacturing establishments, where the hides, wool or hair of animals are prepared for use. The infection usually takes place on the most exposed parts of the body. Eating the flesh of such diseased animals first causes general indisposition, and more or less intestinal troubles, and in eight or ten days, anthrax carbuncles appear, generally about the arms and head. In a few hours, or even in a few days, itching will be felt where the poison first took hold, as if some insect had bitten the part, and a little red speck, with a black point in its centre, will be seen. This little speck soon changes into an itching papule, capped with a small red or blue vesicle, which gradually enlarges. It very soon bursts its dark red base, which becomes covered with a crust, and very often secondary vesicles spring up around it, containing a yellow, red, or black fluid. The surrounding parts now swell and extend over a considerable space, the cellular tissue underneath becoming infiltrated, and in some cases discolored lines marking the course of the veins, or red stripes showing the course of the lymphatic vessels in the œdematous region. The corresponding lymphatic glands also swell up. The symptoms depend upon the severity of the local disease. There is generally fever, great weakness, delirium, excitement, confusion, sweating, diarrhœa, pain in the lips, and in fatal cases, collapse. Where the outlook is favorable, after the dead masses have sloughed off, the wound gradually heals by healthy granulation springing up.

TREATMENT.—Arsenic is one of the best remedies in this affection, and may be given in doses of gtt. 1 to 3 of the tincture, or gtt. 3 to 4 of Fowler's solution, thrice daily. The iodide of arsenic is preferable, in many cases, to the arsenic itself, and may be

administered in small doses, say gr. 1-40. Bartholow says gr. 1-20, but that would irritate the stomach. Moreover, I have found it to act well in very small doses. I usually give the 1st decimal trituration of the homœopathic preparation in doses of from gr. $\frac{1}{8}$ to $\frac{1}{4}$ three times a day, well diluted with water to prevent irritation of the stomach.

Epithelioma.—This form of cancer may first begin as a wart, or a flat infiltration. The first sign is often a simple crack, or a small, hard, pale, dusky lump, which sooner or later fissures, and is either moist, or becomes covered with a brown or yellow crust. This growth increases, it may be slowly, until finally it breaks into superficial ulcers. The typical ulcer is round, and usually about the size of a split bean or larger, has hard, sharply defined edges, and secretes a scanty, yellow, viscid fluid. This form may continue for years as a mere local disease without undermining the patient's general health in any way. This disease often attacks the lower lip also, especially those of smokers. If it attacks the scrotum it is called *chimney sweeper's cancer*, and when it appears on the face, it constitutes what English writers call *rodent ulcer*. Occasionally it first shows itself in the form of papules, which at first are movable, but which later tend to coalesce, and form reddish or purplish colored aggregations about the size of a walnut or smaller. These finally break up and form ulcers, which are attended with sharp, lancinating pains, increasing in degree as the ulcers increase in size. The ulcers are usually round, have hard, everted, indurated edges, secrete an offensive, pale yellow, viscid fluid, and bleed easily. Tissue after tissue gives way under this destructive ulceration, until finally the lymphatic glands become enlarged and suppurate, the patient ultimately succumbing from exhaustion. This form of epithelioma usually attacks the mucous membrane and cheeks, but *may* appear upon any part of the body. It may progress slowly or rapidly, and when left to itself usually proves fatal in from one to five years, although, in a few rare cases, it may extend over eight or ten years. The affection may develop as a wart-like growth, or cauliflower excrescence, that varies in size from that of a split pea to that of a hazel nut. This ultimately breaks up and forms irregularly shaped, granulating excavations, which bleed easily and slowly run the course of other epitheliomatous ulcers. Epithelioma is believed to originate from the endothelium of the lymphatic vessels.

DIAGNOSIS.—It is liable to be mistaken for lupus vulgaris, or may be confounded with syphilitic affections. Syphilitic formations, however, are always more rapidly developed than epithelioma, and the ulcers of syphilis are generally multiple, have a profuse secretion, and are devoid of pain, while the ulcer of epithelioma is single, with scanty secretion, and attended by severe pain.

Again, lupus vulgaris is most commonly a disease of childhood, while epithelioma is one of middle life; its discharge, too, is very offensive.

TREATMENT.—This disease may be cured in many cases, if taken very early. It is possible to remove the cancer by the knife, the galvano-caustic, or, by what is preferable, Marsden's arsenical mucilage, which is a mixture of arsenic, gr. 40, and mucilage of gum acacia, gr. 20, applied to the ulcers in a plaster $\frac{1}{8}$ of an inch thick. The chloride of chromium, applied with just enough gum acacia to form a plaster, will slowly enucleate the diseased mass, and it may then be dressed with powdered hydrastis. I have used a paste of chromic acid and balsam of fir, with good effect, and also one of chloride of zinc. Some recommend the tincture of thuja oc. internally, but I have found, recently, that Parke, Davis & Co.'s fluid ex. of berberis aquifolium, in doses of gtt. 30 to 20, three or four times a day, acts better. I usually alternate this drug with gtt. 2 to 3 of tincture of arnica. Occasionally, I have found the chloride of gold and sodium to act very well, applied locally and taken internally. For internal use, gr. 1–50 is the proper dose. In advanced cases, I have had marked success by simply washing the ulcer with gr. 5 to 10 of sulphate of zinc to the ounce of water, and then powdering it with the pulverized hydrastis. I now have two cases under this treatment, which are mending very rapidly. If there is debility associated with epithelioma, arsenic, or the iodide of arsenic, is the best remedy.

Paronychia.—This is an inflammation situated around and beneath the nail, and which terminates in suppuration. It generally attacks the thumbs and fingers, seldom the toes, and first appears as a dusky red and extremely painful border, either completely or partially surrounding the nail. The pain is throbbing in character, and suppuration soon takes place. There is a form of this affection that attacks the big toe, which is usually caused by ingrowing of the nail. Paronychia differs from whitlow or felon, in that the latter involves all or nearly all the structures of the fingers, and appears most commonly on the palmar surfaces of the hand.

TREATMENT.—As a local application, the pith of the common bulrush has been successfully used. If suppuration is tardy, the sulphide of calcium is very useful in doses of gr. 1 to 2, three times a day. The sulphate of sodium, in doses of gr. 1 to 2, may be taken thrice daily, with excellent effect. If the gathering proves very severe, and will not readily heal, graphites, (a homœopathic trituration of say the 1st. dec.) black lead, may be used, in doses of gr. 1–5 to 1–10, three times during the day. Sometimes there is a tendency to the formation of proud-flesh, and in such cases, a little chloride of bromium may be occasionally applied to

the spongy granulations until they are removed, and then the part washed in boracic acid, and powdered with iodoform.

Felon.—This is an affection of the various structures of the fingers, and is frequently followed by the destruction of the first, and sometimes the second phalanges. It is attended with very great pain, which often forbids sleep for several days and nights. The pain is throbbing and tensive, often extending as high as the elbow, and even the shoulder, and is aggravated by a depending position of the hand. The pain never ceases until the pus is evacuated, or until the diseased parts die. The swelling is sometimes enormous, involving the fingers, wrist and arm, the skin of which is red, œdematous, and puffy, resembling the skin of erysipelas. Very frequently the limb is stiff. The inflammatory process often commences in the deep seated tissues, pus forming near the bone, in the connecting cellular substance, within the sheaths of the tendons, or beneath the periosteum. If this pus is not soon discharged, the disease will spread in all directions, burrowing along the finger and hand, and causing extensive destruction. Gangrene may even set in, followed by considerable sloughing of the tendons, and exfoliation of the phalanges. This grave form is always attended with constitutional disturbances; there will be fever, loss of appetite and sleep, pain in the head etc.

TREATMENT.—Cases that I have seen at an early period, before pus has formed, I have usually cured by wrapping the finger firmly and evenly, so as to compress the superficial circulation. If this is done promptly and properly, it seldom fails to cure the disease, but if it be neglected until the pus forms, an incision down to the bone is the only step that will cure this affection. When thus completely split open, (not merely lanced), and an incision made with a scalpel right down to the bone, it heals as a wound. Where persons however would not submit to this treatment and absolutely refused to have the felon opened thus with the knife, I have resorted to medical treatment. The carb. of ammonium in small doses, will sometimes lessen the pain, and enable the patient to sleep, and the sulphide of calcium accelerates the supuration. I have shortened the course of these painful whitlows on the fingers, by applying tape, as mentioned above, keeping it moistened with iodine (tinct.) $\frac{3}{2}$; aconite $\frac{3}{1}$; keeping the tape wet with the solution all the time. This lotion lessens the pain a good deal, and doubtless aids the bandage in maturing the disease, and drawing the pus to the surface. I have no confidence in internal treatment, for I have never seen it render any essential service towards a cure.

Psoriasis.—This is a non-contagious disease of the skin, but one that seems to be constitutional.

SYMPTOMS.—Psoriasis is characterized by reddish, thickened

patches, covered with white or yellow-white scales, resembling mother-of-pearl in color. These patches are of various sizes, and usually appear as small, reddish spots, hardly at all raised above the skin, but always covered with white scales. They generally develop rapidly, and in a few days are as large as a nickel, and look like drops of mortar on the skin. As they increase in size, they have a tendency to run together, and lose the circular outline that first characterized them. In some cases, the centers of the patches become clear, giving the disease the appearance of rings. Some writers speak of these different stages as distinct varieties of disease, as *psoriasis punctata*, *psoriasis mummularis*, *psoriasis gyrata*, etc. These are not distinct varieties of cutaneous disease, but simply different stages of the same disease. The scales of psoriasis are of a characteristic silvery whiteness, and are situated upon a red and inflamed base. The most common seats of this affection are the elbows, ankles or knees, but it may appear upon any part of the body. It is supposed to be due to a perversion of the cell life of the rete. It generally attacks families predisposed to gout, and these in winter.

CAUSES.—Its etiology is quite obscure. By some writers it is claimed to be of malarial, and by others, of traumatic origin. Next to eczema and psoriasis, it is one of the most common diseases of this country and of Europe.

DIAGNOSIS.—Its characteristics are the silvery whiteness of its scales (which look as if they were heaped up); its situation on an inflamed base of the cutis (which is much inclined to bleed in pin-point drops on the removal of these scales); and its location (the elbows and knees being its usual situation).

TREATMENT.—The diet should be rich and of a healthy character, such as beef, fish, and fowl. Maltine and cod-liver oil are also of much benefit. I order bran baths to remove the scales, and then anoint the parts with the chaulmoogra oil, or the chrysophanic cerate. I do not use the latter too strong, gr. 1 to 30 of lard is strong enough to begin with. The oil of cade, either in full strength or diluted with olive oil, may also be used in many cases with good effect. A mixture of tar and alcohol (1 part of tar to 5 parts of alcohol) often answers well. The biniodide of mercury ointment (gr. 1 of the biniodide to gr. 50 of lard) has proven itself to be of much value; and a wash of the solution of calcium sulphide (not too strong), is of material service in obstinate cases. A wash every day with green soap is very good in indolent cases, where the scales are thickened and infiltrated. The internal treatment should commence with the tincture of sulphur, or with gr. 1 or 2 of the sublimed sulphur, three times a day. This routine should be continued for three weeks, and then changed for some of the remedies named below.

When the scales are continually exfoliating, the carbonate of ammonium, in small doses, may be ordered three times a day. If the skin be dry and scaly, arsenic, in the form of a saturated tincture, may be taken with a prospect of good effect. The dose should not be large, not more than gtt. 1 to 2, three times a day, lest it produce its toxical effects. Iris versicolor is also a valuable remedy. Phytolacca is also efficient, after arsenic. Berberis aquifolium, in doses of gtt. 30, thrice daily, acts well in most cases.

Lichen Planus and Lichen Simplex.—This is a chronic disease of the skin, commencing with dull red, flat-topped, angular-based, glazed papules, about the size of a pin-head, which are attended by more or less pruritus. It is not very common in the United States, and when it does occur here it is generally associated with a debilitated state of health. The eruption resembles millet seed, and at first has a shiny look, but after awhile becomes covered with thin, micacious scales. These papules start abruptly from the skin, are irregularly shaped, are flattened on the top, and frequently present an umbilicated depression in the center, which is really the opening of the hair follicle. They are usually discrete, but may be in patches, and as a general rule develop slowly and occur symmetrically. Sometimes stains are left, and occasionally small pits remain after the disease has gone. This trouble may occur at any age, but it attacks women more than men. It selects as its seats the front of the forearms, the wrists, the thighs, the abdomen and the legs below the knees. It is thought to originate from a disturbance of the trophic nerves of the hair papillæ. Hyperæmia results from this disturbance of the trophic nerves of the hair papillæ, and so does the formation of new tissue in the parts.

PROGNOSIS.—The prognosis is usually favorable, except in the diffused form of the disease, the *lichen rubra* of Hebra, which is generally associated with marasmus, and may, unless successfully treated, terminate fatally.

TREATMENT.—The diet should be liberal. To relieve irritation and itching, local treatment may be necessary. A wash of a solution of the tincture of grindelia robusta may be used say, $\frac{3}{4}$ 1 of it to $\frac{3}{4}$ 3 of water, applied three times a day, or carbolic acid $\frac{3}{4}$ $\frac{1}{2}$ to $\frac{3}{4}$ 7 of water. The pyroligneous oil of juniper will be found effective in cases of long standing. The best internal remedy is crude antimony, in very small doses. Arsenic, too, is invaluable in chronic cases, in doses of gtt. 1 to 2, thrice daily. Iodine produces good results in cases where the papules are small and red, and so does the iodide of sulphur, when the disease attacks the chin and nose. Bichromate of potassium, in small doses, also acts admirably, and so does the tincture of juglans in small doses.

Prurigo: Pruritus.—This disease is characterized by the development of small papules, which are about the natural color of the skin, and which are accompanied with intense itching. It commences with the gradual formation of small, sub-epidermic elevations, which feel like shot, and are sometimes perforated by small hairs. The papules are the result of chronic inflammatory changes in the papillary layer. Intense itching, with a sensation like ants stinging, is one of the earliest symptoms, and continues with more or less intensity throughout the whole course of the disease. As the affection advances the skin becomes more or less thickened, rough and harsh, and feels rather dry to the touch. Pruritus may appear upon the exterior surfaces of the lower extremities, but is most frequently found upon the forearms, the trunk, and elsewhere about the body. It is apt to commence before puberty, and to grow worse during the winter, not unfrequently annoying the patient through life. The trouble is not very common in the United States.

DIAGNOSIS.—It is apt to be confounded with phtheiriasis, but is not accompanied with pediculi, as phtheiriasis always is.

TREATMENT.—The patient should be put upon a nutritious diet, and have a sulphur bath at least once or twice a week. To allay the intense itching and formication, a carbolic acid lotion should be ordered, $\frac{3}{4}$ to 4, water, and a lotion of the tincture or fluid ex. of *dioscorea villosa*, or *mezereum*, may alternate with it. Sulphur should be given internally at the outset in doses of gtt. 5 to 6, of a saturated tincture, three times a day. After the affection has become chronic, arsenic (saturated tincture), in doses of gtt. 1 to 2, is the best remedy, and it may alternate *dioscorea vil.*, in doses of gtt. 10 to 15. *Pruritus simplex*—simple itching, without any eruption, occurs frequently, and must not be confounded with *pruritus*, with papules. This simple itching is merely a perverted sensibility of the skin, and is a very common accompaniment of a variety of skin diseases. It accompanies leucorrhœa in females, piles in either sex, and is often symptomatic of some nerve disturbance, as indicating bile, or some other foreign element in the blood, and must be treated as such.

Itch.—This is a contagious disease, caused by the burrowing of an animal parasite called the *acarus scabiei*, in the skin. It is known by the early formation of cuniculi, attended with intense itching, especially at night. There may be also, in cases of long standing, vesicles, pustules and crusts. The first symptoms are itching and the formation of minute inflamed points or vesicles, which generally appear first, in the space between the fingers, and from thence, if not well treated, spread over the hands, and finally, the body. Under the microscope the itch insect may be seen as a whitish-yellow speck, headed by a dark curved line. This insect

is often found on the abdomen and on the inner surface of the thighs. Itch is frequently conveyed from one person to another by hand-shaking, and very often by taking books, clothes, garments and other articles from the hands of those affected with the disease.

DIAGNOSIS.—It is known by its cuniculi, with the acari inside. Primarily its seat is generally in the interdigits and the wrist, but later in the flexures of the body, the buttocks, and the abdomen and penis. The itching is always worse at night.

TREATMENT.—Sulphur, internally and externally is a specific for this disease. As an internal remedy, gr. 3 to 5, may be ordered every three hours in the day, or as an external application gr. 8 or 10, may be incorporated with $\frac{1}{2}$ lb. of lard and be well rubbed in thrice daily, after the patient has been washed well with soap suds. An ointment of liquid borax not too strong makes a good parasiticide. The balsam of Peru $\frac{1}{2}$ oz.; oil of lavender, gtt. 5; lard $\frac{1}{2}$ lb.; makes a good local application. It is best to apply these ointments at night and wash them off next morning, pursuing this plan for three or four days, and then changing the clothing and allowing the patient to rest a few days from the ointments, and take the sulphur internally to see what has been accomplished by external treatment. All the clothing should be boiled in strong soap suds before the patient puts them on again. If the above remedies fail, sulphurous acid may be tried (diluted), the sulphites, or an ointment of carbolic acid, or oil of cajuput. An application of the sulphide of potassium, $\frac{1}{2}$ oz. and lard $\frac{1}{2}$ lb., will often cure this affection.

Prairie Itch.—This is an acute inflammation of the skin, generally appearing in new districts, where it may be endemic for a time. It may be preceded by premonitory symptoms, such as headache, slight fever and general malaise; or its attack may be first marked by the appearance of erythematous spots. These spots are covered with small, transparent vesicles, of various sizes, from that of a pin's head to a mustard seed, and are situated on the neck, shoulders, back and outer surface of the limbs. The eruption is also accompanied by an intolerable itching, which increases at night. Where the patient scratches himself, and ruptures the vesicles, there exudes an exceedingly acrid, irritating fluid, which prolongs the disease, unless it is washed off, and the parts covered with a layer of wood ashes. Sometimes large black crusts are found covering suppurating ulcers, and not unfrequently boils are complicated with this troublesome disease, especially if neglected.

TREATMENT.—The syrup of *rumex crispus* is one of the best remedies we have, in doses of $\frac{1}{2}$ oz. to 2, ter die, and a wash of a strong infusion is a good addition to it.

CHAPTER XXI.

DISEASES OF THE SCALP.

There are five layers in the skin of the head, viz.: (1) the derm, or outer skin, thickly covered with hair, and containing countless sebaceous and sudoriparous glands (the sebaceous glands secrete an oily, fatty substance, and the sudoriparous glands are the organs of perspiration); (2) the epiderm; (3) the subcutaneous cellular tissue, containing the net-work of the larger blood vessels, in which the nerves are imbedded, and which join the epiderm to the aponeurosis. This skin is spread tightly over the cranium. (4) Just under this is found the second cellular tissue, consisting of loose meshes which connect the aponeurosis loosely with the pericranium; (5) the immediate covering of the bones of the cranium, which transmits the vessels. All, or a single one of these tissues may be involved in disease. The scalp is liable to a peculiar form of rheumatism, in which the entire integument becomes very sore and painful. It is very common in rheumatic habits, and occurs in cold, wet weather.

TREATMENT.—I have found *cimicifuga*, in doses of gtt. 15 to 20, of the tincture of fresh root, a very positive remedy for this affection.

Dropsy of the Scalp.—This most commonly consists of a collection of serum in the cellular tissue of the scalp, or there may be a collection of serum between the aponeurosis and the pericranium. When serum collects in the cellular structure, it is very apt to spread down to the face; and may be known, like dropsy elsewhere, by its pitting, upon pressure of the finger. If, however, it forms underneath the aponeurosis or the galea capitis, the swelling is tight, elastic, fluctuating, and neither pits by pressure, nor spreads over the face. These forms may occur with a general tendency to dropsy, or they may be provoked by erysipelas, etc.

TREATMENT.—Sometimes the timely administration of a good dose of compound powder of jalap and cream of tartar, followed by a few doses of the acetate of potassium will overcome this form of dropsy; and if there be anæmia, the nitrite of iron should be given for a few weeks. In obstinate cases, I have succeeded with apochynum cannabinum in doses of gtt. 15 to 25, every three hours.

Erysipelas of the Scalp and Face.—This is an acute inflammation of the skin of a peculiar kind. In some cases the adjacent

lymphatic glands are enlarged. The disease is undoubtedly contagious and inoculable; but often appears spontaneously under some peculiar conditions not well known, and when it occurs in this way, it is called *idiopathic* erysipelas. So contagious is it sometimes, that it may be carried in clothing, or even in instruments which have been used in connection with patients afflicted with the disease. When it thus originates from clothing or instruments, it is called traumatic. A very slight abrasion or cut may absorb the virus, or the disease may be communicated by the nurse and the attending physician. I once saw the disease produced on a young mother's arm from contact with the scalp of her babe that had erysipelas of the head. It often arises, however, as mentioned above, without any infection, seeming to be the result of some peculiar atmospheric condition. It is no less a constitutional disease than measles, scarlatina, and roseola. Prof. Da Costa has conclusively shown that erysipelas is almost always attended by albuminuria, although, in the traumatic variety, this is either absent, or appears in a very mild form. Erysipelas, like phlegmonous inflammation, affects all the tissues of the skin, and also the subcutaneous cellular tissue. The various layers of the scalp with the subcutaneous cellular tissue, are œdematous, swollen, and penetrated by white blood corpuscles. One very decided tendency of this disease, is to spread very uninterruptedly and gradually over the surface it attacks. It seldom, however, extends from the head to the neck.

SYMPTOMS.—Chilliness, feverishness, or general indisposition may precede, by one or two days, the outbreak of this disease. The part attacked begins to feel hot and tense, and the skin becomes very red, swollen and sensitive to the touch. The neighboring lymphatics may also become swollen. The skin of the affected part has a smooth shiny appearance, and the color is darker and duller on the scalp than elsewhere on the body. The inflammation is apt to creep over the entire scalp, and then down to the face, and sometimes even to the neck and shoulders. The swelling attains its height in about three or four days, and very often during this stage the epidermis becomes raised and filled with limpid, yellowish fluid, like blisters in shape. This form is called erysipelas bullosum. The blisters may either dry up, or burst and form scabs or crusts. During the acme of the fever, there may be evening aggravations, and the patient may be delirious, or, if not, his sleep is disturbed by frightful dreams. About the fourth day, in favorable cases, the swelling and redness of the skin begin to subside on the parts first attacked, but the parts which were last attacked still remain inflamed. Eventually the entire diseased surface becomes paler and wrinkled, the crusts fall off, the epidermis peels off in large flakes, and the disease terminates

in from twelve to fifteen days. In some cases it may also attack the mucous membranes of the nasal and pharyngeal cavities, causing an œdema of the glottis, and affecting the larynx, the bronchial tubes, and sometimes the lungs. In this case it produces pneumonia, pleuro-pericarditis or carditis, and proves fatal. Again, erysipelatous inflammation may be transferred to the meninges of the brain or to the brain itself, and so terminate fatally. The tongue is covered with a creamy coat, which gradually dries, and becomes of a dirty, yellow color; or if the disease continues long, the tongue becomes crusty, and of a black or dark brown color. Nausea and vomiting are not uncommon. Occasionally, a violent diarrhœa sets in about this stage, or a profuse hæmorrhage from the bowels, (caused by ulceration of the duodenum), which is very apt to prove fatal. In idiopathic erysipelas, there is generally more or less albuminuria. The temperature in this disease runs very high, from 104° to 105° F., and in some cases as high as 106° or 107° F. Sometimes there are marked intervals of depression of temperature, and then sudden risings. Where the scalp is highly inflamed, the hair may fall out, but will quickly grow again. In severe cases, the skin on the scrotum, eyelids, vulva, prepuce and other places where it is tender, may undergo gangrenous destruction, and the disease may thus be protracted. The first attack of the disease, instead of destroying the patient's susceptibility, leaves him or her more liable to it again. I have frequently treated persons who were subject to periodical returns of erysipelas upon the face and limbs.

PROGNOSIS.—The prognosis is generally favorable unless the disease attack the internal organs and brain, or prevails in an unusually malignant form, when it proves very fatal under any treatment.

TREATMENT.—If the disease appears in the phlegmonous form, I find aconite very useful, in doses of gtt. $\frac{1}{2}$ to 1, every two hours, alternated with gtt. 2 to 3 of belladonna. I find belladonna to be especially serviceable in cases where there is intense dermatitis, high fever, redness of the skin, headache or delirium.

If the disease invades the inner tissues, let *apis mel.** (tincture of the honey bee) be taken in doses of gtt. 3 to 5, alternated with *rhus toxicodendron*, in doses of gtt. $\frac{1}{2}$ to 1, every two hours. The *rhus tox.* is especially indicated where there is simple vesicular œdema, and a purplish color of the skin. *Apis mel.* is indicated by smooth, acute œdema of the eyelids, and skin of the scalp and face. Where the disease commences in a magignant form, or assumes that type, any time during the course of its attack, I give small doses of arsenic (tincture) in doses of gtt. 1 to 2, every three

*See Author's New Medicines.

hours, well diluted with water. A tendency to gangrene, or a typhoid prostration, also calls for arsenic, and cannot be met as well by any other remedy. The local application of tincture of *veratrum viride*, diluted with one or two parts water, is of much utility. If there is wild, raving delirium, tincture of stramonium, in doses of gtt. 5 to 6, will relieve this symptom. If there is anaemia, the muriate of iron is invaluable in doses of gtt. 10 to 15.

Eczema of the Scalp.—In eczema of the head, the inflammation extends to the hair follicles, and passes rapidly into the pustular stage. It is a non-contagious affection of the skin, and is characterized by an eruption of minute vesicles, which are frequently confluent. So dense are the vesicles in some cases, that they appear like a large blister. These vesicles form thin scales as they dry up or break and discharge a milky fluid of varied consistency, which finally concretes into crusts. This form of the disease, like eczema of the body and limbs, spoken of elsewhere, is acute or chronic. It has received various names, as *ecthyma*, *porrigo*, *tinea capitis*, and chronic *psoriasis*. To distinguish it, we must look for the following characteristic, viz: vesicular eruption, which is often confluent, and discharges a limpid, turbid, and milky fluid, which forms thick or thin crusts. Pustular eczema is called *impetigo*, and differs from the vesicular form, simply in having pustules, instead of vesicles. A vesicle is a very small blister, and a pustule is a pimple. *Impetigo* is pyo-genetic (pus-forming) and forms pus instead of the milky, limpid fluid, that is found in eczema. Both these affections may be found together upon the head, covering large patches on the cranium, and may be distinguished from each other, by the thin scabs of eczema, and the thick and tense ones of *impetigo*, which are of a greenish-yellow or brown color, and appear as crusts, because they have been formed from real pus.

TREATMENT.—In simple eczema, the tincture of *rhus toxicodendron* has been very successful. It should be given short of its toxical effects upon the skin, say, gtt. $\frac{1}{2}$ to 1, three times a day. After the vesicles form crusts, and the disease becomes chronic, I find the tincture of arsenic, in doses of gtt. 2 to 5, to be one of our most reliable remedies. It may be alternated with the *viola tricolor*, in doses of gtt. 5 to 10, given three or four times in the course of the day. The head should first be washed with green or tar soap, and then with sulphuretted potassium or the sulphide of calcium. I find that a wash of a saturated solution of boracic acid is good. *Clematis erecta*, is a valuable remedy, and may be used in doses of gtt. 5 to 6, three or four times daily. The carb. of barium is also a good remedy, in small doses of gr. $\frac{1}{8}$ to $\frac{1}{4}$, three times a day. I have found a local application of the acetated tinc-

ture of the *rumex crispus* to the diseased parts, to have very positive curative effects. I had eczema very severely, in a chronic form, when I was about fifteen years of age, and recovered from the attack through the use of *rumex crispus*. I am at present treating one of the worst cases of this disease that I ever saw, and have given the woman the tincture of arsenic, alternated with *dulcamara* (bitter-sweet); the arsenic in doses of gtt. 2 to 3 of the tincture, and the *dulcamara* in doses of gtt. 5 to 10 of the fluid extract, three times a day. I follow this with the application of a strong solution of boracic acid to the scalp. I have also used carbolic acid in glycerine and water with success, say gr. 2 to 5 of the acid to about $\frac{3}{4}$ of glycerine and water, applied with a soft cloth or sponge, *ter die*. A wash of sulphuretted potassium aids in the cure of chronic eczema, and so does one of equal parts of pure glycerine and tincture of *grindelia robusta*. An ointment of *croton tiglium* ($\frac{3}{4}$ 1 to $\frac{3}{4}$ 4 *aqua rosæ*) is also a good application.

Dandruff.—Dandruff is an eczema, in which the exudation is so scanty that it does not produce vesicles, but merely loosens the epidermis, which dries and peels off in scales. The skin under these scales remains congested and hence new scales are produced. The disease may be confined to a small surface, or it may extend to the whiskers and eyebrows. It is generally of a chronic character.

TREATMENT.—The tincture of the *rumex crispus*, in vinegar, applied locally, and sulphur given internally in doses of gtt. 5 to 8 of the tincture, will have an excellent effect. If the disease does not yield to these remedies, I give small doses of tincture of arsenic, and wash the scalp with carbolic soap, or anoint it three times a day with carbolic acid and glycerine. An ointment of salicylic acid, or a solution of it in sweet spirits of nitre, gr. 20 of the salicylic acid to $\frac{3}{4}$ 2, of the nitre, also acts admirably. I have used the saturated solution of boracic acid with equally good effect, and I have not found anything better as a local remedy. It may be used three or four times a day, as it is not painful unless there is great irritability of the parts.

Seborrhœa Capillii and Vernix Caseosa.—This disease affects principally the scalp, but may appear elsewhere upon the body. It has no regard for age, but attacks females oftener than males. It is very common in new born children, and in them is more a physiological than a pathological condition (*vernix caseosa*). It generally occurs in the form of an oily coating on the skin, or in the form of dirty white scales, which are flat and more or less greasy. When it attacks the scalp, it may eventually cause baldness, and is often confounded with eczema. It must always be remembered, however, that seborrhœa is a dry, oily disease, while eczema is not oily, but gives rise to a lymph-like fluid, and dries

into scales seated upon a reddened, infiltrated surface. The scales of seborrhœa are seated upon a pale, bluish-colored skin, and are abundant, while the scales of eczema are scanty. If these differential points are considered, the diagnosis is easy.

TREATMENT.—The oily scales should be saturated with olive oil or glycerine, and softened, and then, after some twelve hours, they can be removed with a soft sponge, dipped into soap suds. After removing the scales, the glycerole of tannin may be applied. When the disease appears on the face, a powder composed of gr. 6 of tannic acid to gr. 40 of rice powder, will have a good effect. The most effective internal remedies are arsenic, muriate of ammonium, bryonia, iodine, phosphorous, bromide of potassium, sulphur and thuja oc. Where the skin is of a smutty brown color, or yellow and mottled, gtt. 1 to 2, of tincture of arsenic should be given, three times a day. If the hair is falling off, and there are large bran-like scales constantly accumulating, the muriate of ammonium, in doses of gr. 1 to 2, three times a day, will give excellent results. In chronic cases, that have lasted long bryonia, in doses of gtt. 2 to 3, may be given every three hours. If the scales adhere firmly to the skin, the compound tincture of iodine (Lugol's solution) should be administered in doses of gtt. 5, thrice daily. If there is a copious formation of the scales, which fall off in clouds, tincture of phosphorous, may be used in doses of gtt. 1 to 2, well diluted with water. If the disease be on the face, bromide of potassium is the remedy indicated, dose gr. 2 to 5, three times a day.

Favus.—This is sometimes called *tinea favosa* or *tinea maligna*, and is a contagious disease, characterized by the appearance of one or more different sized cup-shaped scabs, of a yellow, sulphur color, which are pierced by a hair. This disease is one of filth and dirt, and, hence, is found among the poor and lazy classes of the people, appearing mostly upon the head, but sometimes attacking the trunk and occasionally the limbs. It is supposed to originate from a vegetable parasite, which leaves a slight redness that is accompanied by itching whenever it touches the skin. Very soon scales form on this reddened surface, and assume the form of crusts the size of pin-heads, which continue to increase. The disease thus spreads, so that at the end of two weeks, the collected mass presents the umbilicated form of the fully developed favus cup. These cups may remain separated, or they may coalesce and form yellow-colored aggregations, resembling honey comb. These cup-shaped scabs have their concavity directed upward, and vary in size from that of a half buck-shot to that of a dime. They are straw or sulphur colored, and have the odor of straw, mice, cat's urine, etc. When they are removed, the skin appears more or less reddened, and hollowed out, corresponding to the under surface of the scabs. It is not uncommon for the hair to be loosened

from its follicles by the fungus, and for it to come out as the scab is detached. Where the ravages of this parasite are very extensive, and the disease severe, the hair follicles may be altogether destroyed, and the scalp left red, smooth, and shining. It is very common among the negroes in the United States, but not of frequent occurrence among the whites. It is very contagious, seldom, if ever, originating spontaneously, but it may be communicated from beast to man. Favus may have its seat in the hair follicles, or upon the skin, but is always caused by the vegetable parasite called the achorion Schonleinii, named after its discoverer Schonlein. The affection was discovered microscopically in the year 1839, and is known by its straw-colored, cup-shaped scabs, and its contagiousness. It may be distinguished from eczema by its having yellow scabs, while eczema has green ones, which are cup-shaped like those of favus.

TREATMENT.—The first thing to be done is to kill the parasite upon which the disease depends, and with this object in view the local application of parasiticides should not be neglected. In order that local remedies may be effective, the crusts must all be removed, and the diseased hairs all pulled out. The application of almond oil, or of a marsh-mallow or turnip poultice, will so soften the crusts as to allow of their being very easily detached, after which the hairs may be removed by forceps. The hypophosphite of sodium gr. 5 to 31 of glycerine and water, may then be applied. Sulphurous acid in full strength, if it is not too painful, or diluted, if it is too painful, will be found a very potent medicine. It should be applied, and then the part kept covered with oiled silk or a rubber cap. Chrysophanic acid, in the form of a cerate, may be applied, if there is much itching. If this should fail, a cerate of grindelia robusta will be of good service, or pyroligneous oil of juniper may be occasionally used with good results. Lotions of carbolic acid, which are not too strong, are very efficient in allaying the itching. The iodide of arsenic is one of the most reliable internal remedies, and may be alternated with sulphur.

Ringworm.—This is caused by the trichophyton, a microscopic unguis, which selects for its seat the roots of the hair, or the body, and there produces the disease known as the “ring-worm.” Sometimes it attacks the beard of adult males, and causes the disease called “barber’s itch.” One of its first indications is trythematous redness and itching, which is soon followed by a crop of evanescent vesicles, and these in turn by a copious, scaly formation. When it appears upon the scalp, the hairs covering the diseased part, gradually become very brittle and break off, or become loosened and fall out. The skin where the hairs fall out, or break off, becomes wrinkled, and looks like goose-skin.

When it attacks the body it spreads in the ring, until it attains the size of a silver half-dollar or dollar. As the skin becomes accustomed to the fungus, which now had assumed a cellular form in the oldest part of the patch, the redness in the center gradually fades away, while the disease continues to spread towards the periphery, where the sprouting mycelia are the most active. This disease occasionally attacks the nails. *Tinea kerion* [from the Greek *κηρίον* a honey comb], is the name given to a form of tinea, which is the result of a more violent action of the trichophyton. In this form the hair follicles become very much inflamed and exude a viscid mucus, somewhat resembling the juice of the ripe mistletoe-berry. The trichophyton, (from *τρίξ* a hair, and *φυτόν* a plant) was discovered by Gruby in the year 1843 and in 1854, Bazin of Paris, France, more fully described it. It is composed mostly of spores and mycelia, and has but few granules in its composition. The spores look much like minute fish roe, being very uniform in size, and the mycelia are more or less composed of granules and are jointed. These spores are more abundant on the head and in the beard than on the portions of the body which are without hair, while the mycelia are most abundant on the portions without hair, as the cheeks, neck, etc.

DIAGNOSIS.—This disease may be mistaken for seborrhœa, eczema, psoriasis, favus, sycosis and acne. It may be distinguished: (1) from seborrhœa by the acute nature of the disorder, and by the absence of enlarged follicles and a greasy surface: (2) from the squamous stage of eczema, by the abrupt marginal form of the eruption, loosening of the hair and a more rapid course: (3) from psoriasis, after examination under the microscope: (4) from favus, by the absence of the characteristic crusts of the latter, and also by the difference in the character of the fungus: (5) from sycosis, by the loosened hairs, the peculiar characteristic tubercles and the presence of fungus: (6) from acne by its appearing generally on the hairy parts, while acne almost always appears on the face and cheeks. Ringworm, to be sure, does occasionally appear on the face, but most often attacks the scalp and beard. If chloroform be applied to the diseased part, when fungus is present, the part turns whitish-yellow, as if there were sulphur on it.

TREATMENT.—The first step in the treatment is to kill the parasite. This may be done by epilation, and then by the use of proper parasitocides. A solution of corrosive mercury, gr. 1 to 2 to 52 of water, will kill the parasite. Sulphurous acid will kill it and so will iodine and chrysophanic acid.

Vascular Nævus.—This is a dilation of a portion of the network of capillary vessels of the derma and cellular tissue. This disease may also be pigmentary, as well as vascular. The pigmentary form is dark colored, and generally slightly elevated above the

skin. It varies from the size of a pin-head to that of a silver half-dollar, and is sometimes covered with hair—called “mouse marks.” Vascular nævi are the most common variety, and are of a reddish, or rather brown color, in some cases being nearly black. They appear anywhere on the body, and may increase in size or remain stationary.

TREATMENT.—The pigmentary nævi may be gradually removed by applying a paint of collodion; say collodion 3 1, and corrosive sub. gr. 5, repeated as often as required, at least once or twice a week. I have just removed several from the face and neck of a patient by touching each one with nitric acid once a week. Two or three applications have removed them nicely, and without much pain. If the nævi are of the vascular variety, the fluid extract of thuja oc. will often be sufficient to remove them.

Baldness.—Simple alopecia consists in the loss of the hair in certain portions of the scalp, or over the larger portion of the head. It is frequently a symptom of some other disease, especially that of disease of the head and appears in the form of variously sized, white bald patches. It usually sets in first on the scalp, but sometimes in the beard. In rare cases it affects the whole body but this does not happen often. It usually attacks young people, and mostly on one side of the scalp first. Alopecia commences with nickel-sized, round areas devoid of hair. These spots spread more or less rapidly, and other spots soon appear elsewhere, very frequently spreading over one side of the head. The hairs do not break off as in tinea trichophytina, but generally fall out by the roots, and leave a smooth, polished surface. Very fine down frequently appears on the denuded part, but generally soon vanishes. This disease may run on thus for years. It is now believed to be of a parasitic variety, originating from regular spores, formed in either complete or incomplete rings.

TREATMENT.—As the disease is a parasitical one, the treatment, must be commenced by the use of such remedies as will destroy the insect. At the same time epilation may be resorted to (with broad lipped forceps), upon the margin hairs. Locally, acetic acid, tincture of cantharides, or tincture of iodine may be applied. If these remedies do not seem to arrest the disease in two or three weeks, equal parts of glycerine and tincture of capsicum may be applied to the diseased part; and if these should fail, a weak lotion of tincture of phosphorus may be tried. The oleate of mercury has strong, curative powers, say iodide of mercury gr. 16, simple cerate 3 1. I apply it lightly over the diseased surface, once or twice a week, for there is no danger in using this preparation, especially if about 3 2 of iodide of potassium be added. One of the best internal remedies we have is phosphorus in doses of gtt. 10, three times a day. The sulphide of calcium is

also a very efficient medicine in doses of gr. 1, three times a day. The *testa præparata* (the white substance just beneath the inner layer of oyster shells), in doses of gr. 2 to 3 three times a day, is also worthy of at least a trial.

CHAPTER XXII.

DISEASES OF THE HEAD AND BRAIN.

Anæmia.—Anæmia of the brain, upon inspection, shows the grayish substance of the brain paler, or nearly white, and the white substance of the brain, milk white and glistening. When the brain is cut open, fewer clots of blood are found, than exist in the normal, healthy brain. The blood vessels of the membranes are found empty, and sometimes, an increased quantity of serum has been found between the subarachnoidal spaces within the skull.

CAUSES.—These are, all hæmorrhages, loss of vital fluids by diarrhœa, summer complaint of children, long spells of fevers, hepatization of the lungs, starvation, and anything that exhausts the vital fluid. Congestion of the blood in other organs gives rise to it by withdrawing the blood from the brain, and compression of the carotid or vertebral arteries, either by ligation, tumors, or emboli, prevents the flow of blood to the brain. Spasmodic contraction of these vessels, from emotions of the mind or otherwise, may also cause anæmia; and so may depressions of the skull, extravasations, exudations, tumors, etc. Heart and lung diseases may prevent the normal oxygenation of the blood in the lungs.

SYMPTOMS.—The symptoms of this condition of the brain differ somewhat in accordance with the cause. If it be from violent depletion, there will be sudden paleness of the face, cold perspiration of the forehead, gaping, slow respiration, dimness and flickering before the eyes, nausea and vomiting, faintness, and in some cases epileptiform convulsions. Where anæmia is gradually developed, the symptoms differ in each individual case, although all are attended by paleness of the face. There is apt to be either mental torpor, drowsiness, delirium, coma, sleeplessness, restlessness, or nervousness. Occasionally there is only vertigo and headache. Ringing in the ears commonly exists, and specks float before the eyes, accompanied with dimness of sight. Great weakness of the entire muscular system prevails in most cases, and sometimes, temporary paralysis, or epileptiform convulsions. Anæmia, consequent upon summer complaint, was called "hydrocephaloid" by Marshall Hall, on account of the similarity of the two conditions. Anæmia may assume either the irritable, or the torpid form. If it assume the former, the child will be restless, start and cry out suddenly in his sleep, and grate his teeth. The face, too, becomes red, the pulse frequent, the skin hot, and spasms may occur; hence, the resemblance to acute hydrocephalus. In the second

stage, collapse takes place, and the child becomes apathetic, and does not look at objects. The eyelids, are also closed, (the pupils failing to react against the light), the respiration becomes very irregular, the pulse grows frequent and small, the body gradually grows cold, and, in fatal cases, the patient may die with the symptoms of coma.

TREATMENT.—As a stimulating tonic to the brain and spinal sheath, there is no remedy superior to *nux vomica* or *strychnia*. *Nux vomica* (tincture), may be taken in doses of gtt. 5, every three hours, in alternation with moderate doses of Horsford's Acid Phosphate. If there is dizziness and vertigo, which is worse in the evening, the carb. of barium may be ordered in doses of gr. 1 of the 3d trituration, thrice daily. If the disease is from the loss of vital fluids, I give the tincture, or fluid extract of cinchona bark, in doses of gtt. 25 to 30, three times a day, and alternate it with phosphate of iron. *Staphisagria* may be taken in the form of a tincture, in doses of gtt. 1 to 2, three times a day, with good effect. If there is delirium, after great loss of blood, arsenic acts well, in doses of gtt. 1 to 2 of the saturated tincture, every three or four hours. I use it alternated with the tincture of *ignatia amara*, in doses of gtt. 5, every three hours. If there are convulsions, consequent upon the loss of blood, I order *belladonna*, in doses of gtt. 4 to 5, every four hours, alternated with the tincture of *pulsatilla*, in doses of gtt. 3 to 5. If this mixture does not give relief in twelve hours, I try *ignatia amara*, in doses of gtt. 5, alternated with *conium*, in doses of gtt. 1 to 2, every three hours. If there is general anæmia connected with this state of the brain, the patient should have a diet rich in blood producing qualities, such as wine, mutton chops and beef essence in small quantity. He should be kept quiet, and must stay in a reclining position until out of danger.

Hyperæmia.—This disease consists in an over supply of blood to the brain. It may result from active congestion, from rush of blood to the brain, or from stagnation of blood in the cerebral substance, owing to passive hyperæmia of the brain. In post-mortem examinations a large quantity of blood is usually found in the vessels and sinuses, especially in the lower part of the cranium, The gray substance of the brain appears swollen and darker than usual, and the white substance generally presents a reddish color. The subarachnoidal meshes contain no fluid. In chronic cases the blood vessels are generally dilated, the substance of the brain itself is often found atrophied, and the subarachnoidal spaces are filled with fluid, especially in cases of old toppers. In some cases however, the above conditions of the brain do not prevail; the vessels being found empty of blood, although during life there were symptoms of hyperæmia. This fact is quite difficult to ac-

count for, and proves conclusively that the dead body does not always reveal clearly what was going on in the living organs. When the brain is atrophied, there is in addition to hyperæmia an increase of cerebro-spinal fluid.

Congestion.—This condition may take place in consequence of an undue activity of the serous membranes, which, being around the brain, act (upon the principle of suction) within the cranium. This is doubtless the state of affairs that gives rise to what is called “a rush of blood to the head.” Congestion may be the result of a deficient flow of blood to other portions of the body, in which case there is an increased flow towards the brain and its membranes. It is also caused by compression of the common aorta abdominalis by tumors, effusions or enlarged abdominal viscera, by contraction of the capillaries of the skin during a chill, by suppression of menses and by severe hæmorrhoidal discharges. Congestion may also arise from dilatation of the capillaries within the brain, either from the excessive use of opium and alcoholic drinks, from too free use of other narcotics, exposure to the sun, continued irritation of the brain by severe mental emotion, or from long continued mental labor. The trouble may also result from paralysis of the vaso-moto nerves, whereby the normal tone of the walls of the capillary vessels is altered, and they dilate and give vent to an abnormal amount of blood. This is often the cause of these sudden deaths that follow violent mental emotions, fright, grief, ecstatic joy, etc. Stagnation or hyperæmia by stasis may arise from compression of the jugular veins, by pressure, goitre, glandular tumors on the neck, or by an aneurism of the aorta pressing upon the vena cava. Deep and rapid inspirations with forced expirations, such as take place in severe fits of coughing, straining and blowing wind instruments, may give rise to this affection where there is predisposition. Disease of the heart (especially tricuspid insufficiency), stenosis of the venous orifice, and insufficiency of the heart’s valves may also bring about congestion. Croup, œdema of the glottis, emphysema, extensive pneumonia, pleuritic exudations and cirrhosis may all be followed by this disease with more or less frequency.

SYMPTOMS.—Excitability, depression, headache, sensitiveness to light, noise or touch, flickering before the eyes, ringing in the ears, formication or tenderness of the flesh, great restlessness, grating of the teeth, convulsions, dizziness, hallucinations, vivid or frightful dreams, and morbid vigilance, all indicate this disease. From depression there may be insensibility to light and noise, numbness of the limbs, dilated pupils, rapid pulse, slow respiration and nausea. Some of these symptoms may be wanting, and there may be others which I have not named.

TREATMENT.—If there is a rush of blood to the brain, or delirium,

aconite acts well in doses of gtt. 1 every hour, alternated with gtt. 2 or 3 of tincture of belladonna. If, however, the patient craves death and complains of heat, noise in the head, and sparks before the eyes, gr. 1-50 of chloride of gold should be taken every three hours. If it occur in children during dentition, gtt. 3 to 5 of gel-semium may be given every three or four hours. If there be loss of sight or hearing, convulsive movements of the muscles of the head and face, wild, stupid expression, with delirium and sleeplessness, gtt. 4 to 5 of the tincture of stramonium should be administered every three hours until these symptoms subside. In some cases that I have had in females, where there were hysterics and where it occurred about the menstrual period, the inhalation of gtt. 5 or 6 of nitrite of amyl has given very ready relief to the hyperæmia. If this affection be caused by mental emotions, ignatia amara should be ordered in doses of gtt. 3 to 5, every four hours. If hyperæmia is easily provoked by exercise, tincture of phosphorous may be given in doses of gtt. 1 to 2, well diluted in water, every two or three hours. If it occurs in females from suppression of the menses, small doses of iron act admirably, alternated with gtt. 5 or 6 of pulsatilla (tinct.), every two hours. If it result from hypertrophy of the left side of the heart, I have found the tincture of cereus grandiflorus to give immediate relief in doses of gtt. 15. Collinsonia, in doses of gtt. 20, should alternate the above.

Vertigo.—This may originate in its milder forms from indigestion, or from nervous exhaustion, but if it appears in a more aggravated type, it points to disease of the brain, kidneys, liver, or heart. It is often associated with structural lesions of the brain, and often exists with hyperæmia or anæmia of this organ. It may be of rather an epileptic or psychical character, and occurs under varied conditions: while quiet, or during motion, on rising or upon stooping, on suddenly turning the head, during sleep, while reclining, from bright and dazzling light, from swift motion, as in riding in the cars, from witnessing a surgical operation, or from seeing blood flowing. It may also arise from looking up or down great heights. It is generally prevalent among adults.

TREATMENT.—If vertigo occurs from dilatation of the right ventricle, from emphysema, or during pregnancy, and is accompanied with pale, puffed lips and face, gtt. 3 or 4 of the tincture of arsenic will aid in relieving it; and if there is also headache, I order gtt. 5 of tincture of belladonna every four hours. If indigestion is the cause, gtt. 5 of nux vomica gives good results, used three times a day, and alternated with gtt. 2 of nitrate of iron.

Insomnia.—If insomnia is attended with vertigo, fever, dry skin, restlessness, and pain in the head or teeth, aconite should be

given, in doses of gtt. $\frac{1}{2}$ to 1, (according to the age of the patient), every hour, until these symptoms pass off, and the patient becomes quiet. If he or she be drowsy, and yet unable to sleep, and the pupils are dilated, gtt. 1 to 2 of tincture of belladonna should be taken, and repeated in three hours, if it fails to give relief. If there is a wild expression of the face and eyes, sleeplessness and wild, raving delirium, I prescribe gtt. 2 to 3 of the tinct. of stramonium. or hyoscyamus, repeated every three or four hours, until these symptoms disappear. If this condition follow loss of blood, the fluid extract of Peruvian bark is invaluable, given (in doses to suit the age of the patient), as a tonic to the appropriate organs, three times a day, alternated with the nitrate of iron. If insomnia occurs in adults, from mental strain, or from the use of tobacco, opium or liquor, gtt. 5 or 6 of the tincture of nuxvomica, three times a day, is the proper remedy, alternated with the phosphate of iron.

Tubercular Meningitis.—This disease generally occurs in scrofulous children, but persons of all ages are subject to it. The chief morbid indication consists in the deposition of tubercular material between the membranes of the brain. It often occurs in families, a member or members of which have died with scrofula or consumption.

SYMPTOMS.—When meningitis appears in children there will be more or less fever, with quick and irregular pulse, vomiting, constipation of the bowels, clay colored stools, red tongue, and continuous heat of the whole body. There is always great irritability, disturbed sleep, grinding of the teeth, pain in the head with intolerance of light and noise. Severe vertigo, when the patient stands erect, and great debility soon set in. Delirium is very often attendant upon this disease, and if is not present the patient is greatly distressed, very often cries out suddenly, and sometimes is so drowsy, that it is difficult to keep him or her awake long at a time. The disease most generally has its seat in the pia mater, the milary granulations being found in the immediate neighborhood of the vessels of the brain, either in the convexity or the base of that organ. In post-mortem examinations, yellow, cloudy, patches have very frequently been seen along the vessels; the ventricles also being dilated and containing hydrocephalic effusion, The quantity of fluid varies greatly in each case, and in some indeed, there may be none at all. Occasionally white softening of a portion of the fornix and the corpus callosum has been seen, and again in other cases, there is no softening of any part. Milary tubercles are often found in almost all parts of the body. This disease doubtless depends upon a scrofulous constitution, which has a tendency to bring on inflammatory exudations, which lead to cheesy degeneration.

In adults there may be mere indisposition at first, short naps full of dreams, starting in the sleep, loss of appetite, constipation of the bowels, fever towards evening, and headache and vertigo. Then follows meningitis, with facial paralysis, vomiting and delirium. In some cases, however, the symptoms come on more gradually, and instead of delirium, there will be headache, vertigo, great sensitiveness to noise and light, vomiting (especially when moved about), and either constipation or diarrhœa. There may be either general or partial convulsions at this stage of the disease. Paralysis of the face, eyelids, or muscles of the ball may set in, and the pupil may be dilated. The patient cries out suddenly in some cases, and convulsive movements take place, which often distort the face and eyes. There may also be squinting or winking of the eyelids, and chewing or grinding of the teeth. One or another of the extremities may become paralyzed, and convulsions of the opposite one may appear. The muscles of the tongue and those of deglutition may become paralyzed, and very often the pulse falls down to about 60 per minute, and the temperature to about 100° F.

DIAGNOSIS.—It is quite difficult to distinguish this affection from simple meningitis. If the patient has any tendency to tuberculosis, we may then conclude that his disease is tubercular meningitis. The prognosis is always bad.

TREATMENT.—Where there is fever, and a quick, small pulse, gtt. $\frac{1}{2}$ to 1 or 2 of aconite (according to age), may be given every one or two hours, as the fever may be more or less severe. If the pupils are dilated, and there is headache, vertigo or delirium, belladonna should be taken, in doses of gtt. 1 to 5, according to the age of the patient, until these brain symptoms disappear. If there is merely drowsiness and stupor, hyoseyamus, in doses of gtt. 3 to 5, may be prescribed every two or three hours, until relief is given. If there is evidence of effusion upon the brain, gtt. 3 or 4 of bryonia alba may be taken every three hours, alternated with small doses of tincture of helleborus niger, in doses of gtt. 10, four times a day. Should the above not act well on the kidneys, apocynum cannabinum should be tried, in doses of gtt. 15 to 20, every three hours, with gtt. 10 to 12 of digitalis to each dose. I have always found these last to act well in hydrocephalus. After the effusion is removed, to complete the cure, if such be possible, I give arsenic, in doses of gtt. 2 to 3 of the saturated tincture, three times a day. Iron may alternate with the arsenic, if there be anæmia.

Acute Meningitis.—This disease is considered to be an inflammatory affection of the pia mater. Upon post-mortem examination, this membrane is generally unchanged, although in some cases it has been found to be anæmic, and in others to contain the usual amount of blood. Usually, the cortex and white substance

of the brain are more or less compressed, and appear dry and firm, the ventricles, perhaps, being dilated, on account of the effusion, but the surrounding brain tissue not being so extensively softened as in tubercular meningitis. The choroid plexus shows greater hyperæmia than the superficial portions of the pia mater, but there is seldom any exudation at the base of the brain. The hyperæmic, or inflammatory nature of this disease cannot be accurately determined by the anatomical evidences as presented upon post-mortem examination.

CAUSES.—The exciting causes are dentition, eruptive fevers, acute pulmonary affections, and concussion of the brain from wounds. It affects children from one to five or six years of age, but rarely later than that.

SYMPTOMS.—The symptoms are so nearly like those of tubercular meningitis that it is hard to distinguish one from the other. If, however, there is an hereditary tendency to scrofula, we may conclude that it is tubercular meningitis, and not simple acute hydrocephalus. In many cases, there are certain prodromic symptoms, such as an inability to swallow, very dry skin while the head is moist, and frequently paralysis of the face and extremities, although this last symptom is not as common in this form as in tubercular meningitis. Besides this form of meningitis, there may be also simple meningitis of the base of the brain. In this last form, there is often a formation of quite dense, hard strips of connective tissue, and in the more active forms of inflammation, there may be fibro-purulent infiltration into the tissue of the pia mater at the base of the brain. Where hydrocephalus is associated with this form of the disease, it is apt to be very profuse and hard to remove. Hydrocephalus generally prevails between the ages of sixteen and thirty years, and may last from thirty to sixty, or even seventy days.

SYMPTOMS.—This form of meningitis usually commences with a chill, which is followed by more or less fever, thirst, sweat, loss of appetite, and severe headache. The fever may be rather paroxysmal, that is the temperature may run up as high as 104° F., in the evening, and fall, in the morning, to the normal state. In many cases, however, the fever continues high all the time, while in others, the temperature, at times, falls very low. There is much irregularity, also, in the condition of the mental faculties. There may be periods of entire consciousness, and then again attacks of wild delirium. There may be paralysis, contractions and spasms, alternating one another. These motor disturbances, however, are entirely wanting in some cases, and death may take place during coma. These indications distinguish this form of meningitis from all others. Again, hydrocephalus occurs in constitutions where there is no hereditary tendency to scrofula or

tuberculosis; and it will also be remarked, that paralysis occurs much later than in tubercular meningitis. It may be distinguished from typhoid fever by the absence of enlargement of the spleen, which occurs in typhoid fever. It differs from cerebro-spinal meningitis, in not having the epidemic character of that disease. The prognosis is generally not favorable.

TREATMENT.—If the children are emaciated, and have large fontanels, and green or slimy stools, the phosphate of the hypophosphite of potassium may be ordered, in doses of gr. $\frac{1}{2}$ to 1, three times a day. In the first stage of febrile excitement, aconite should be given, in doses of gtt. $\frac{1}{4}$ to $\frac{1}{2}$ (according to age), every two or three hours, until the fever subsides. The effusion should be removed by the diuretic effects of *apis mel.* and *apocynum cannabinum*, in doses to suit the age of the patient. If there is wild delirium, *hyoscyamus*, or *stramonium* may be taken, *ter die*, in doses of gtt. 1 to 2. Sometimes when other diuretics have failed to act well, I have had signal success with small doses of tincture of *digitalis* (say gtt. 2 to 10, according to age), given in an infusion of *pipsissewa*. At other times, I have found *digitalis* to act well upon the kidneys, alternated with the tincture of *apocynum cannabinum*. I have had some cases, that after the inflammatory symptoms were subdued, needed small doses of iodine to prevent a return of the effusion. The tincture of sponge also acts well under similar circumstances. *Bryonia* alternated with *belladonna niger*, sometimes has a good effect, especially where the liver is torpid, and the bowels constipated. If there is coldness of the extremities, while the head is hot, twitching of the muscles of the limbs, a bluish appearance of the tongue and mucous membrane of the mouth, and convulsive movements of the tongue, I use the acetate of copper, in small doses. If, after the active symptoms have subsided, there is still pain in the head, vomiting, etc., small doses of phosphide of zinc should be taken, say gr. 1–20, thrice daily.

Cerebro-Spinal Meningitis.—This consists of an acute inflammation, of the pia mater of the brain, and spinal cord, giving rise to an exudation of purulent matter. It generally occurs about the base of the cerebrum, the pons, the optic nerves, the medulla oblongata, the spinal cord, and especially about the dorsal and lumbar vertebræ. Not only is it not uncommon to find the substance of the brain congested with punctiform hæmorrhage and small spots of softening, but in some cases, where the disease has existed long, the substance of the brain is found juicy and œdematous, presenting a watery appearance on section. “In some rare cases,” says Von Ziemssen, “the substance of the brain is found to be tough in consistency.” This disease has been described under different

heads, such as brain fever, pernicious fever, malignant typhus, exanthematic typhus, spotted fever, etc. It has prevailed in France, Italy, Spain, Ireland, Germany, and in various parts of the United States and North America. I have passed through two epidemics of it in Georgia. The young are more liable to it than the old, and males more so than females. The first invasion of it that I remember to have read of was that which prevailed in Geneva, in the year 1805. It is now believed to be an infectious disease, but writers that I have consulted seem to be ignorant of the nature of the germ. It most commonly appears either in winter or spring, and more frequently when there have been great rain-falls and sudden changes in the atmosphere. It is believed to attack most fiercely families who are poorly fed and who are living in damp and badly ventilated houses, built upon the ground. It may prevail in the most healthy regions, however, as an epidemic.

SYMPTOMS.—Meningitis of this type almost always sets in suddenly, commencing with a severe and generally protracted chill, which is followed by a high fever, violent vomiting, headache and prostration. The pain may be in the front or back part of the head. The temperature is not always the same, varying from 100° F. to 104° F., and sometimes, indeed, there may be intervals of normal temperature. The pulse may be rapid and small, or it may not even correspond to the height of the temperature, varying thirty beats in a few hours. In severe cases there may be coma or delirium, but generally there is only somnolence. Sometimes there are convulsions, stiffness of the neck, and finally tonic contractions of the extensor muscles of the spinal column. Orthotonos is quite common; episthotonos not quite as usual, and pleurothonos is rarer still. In some few instances the neck is not affected, but there is itching, aching of the limbs and spine, and such sensitiveness of the skin that motion and touch cause pain. Occasionally there may be erythema, roseola, urticaria and petechiæ. In most cases, there are apt to be ecchymosed spots on the limbs and breast, which occur about the second day. They differ in size from that of a pin's head to that of a silver dollar. About the third or fourth day, the tongue becomes dry, and cracked in places, or still remains moist and heavily coated. The bowels are either constipated or too loose. In severe cases there may be such profound coma or delirium that the fæces and urine pass off involuntarily. Convulsions frequently take place, deep coma and death closing the scene. If the case is about to terminate favorably, the headache and pains in the limbs and spine gradually lessen, and convalescence takes place about the second week. The disease does not last long in severe cases, sometimes terminating fatally in from twelve to twenty-four hours.

SEQUELÆ.—Injury of sight and hearing, chronic hydrocephalus, chronic meningitis, imbecility of mind, and paralysis, may all, under certain conditions, follow this disease.

DIAGNOSIS.—Meningitis is somewhat difficult to diagnose, especially when it occurs with pneumonia. It differs from tuberculous meningitis in the suddenness of the attack, the irregularity of the pulse and the temperature. It is distinguished from typhoid fever by the difference in the eruptions.

TREATMENT.—The fever in this disease demands aconite, which should commence the treatment, in doses of gtt. 1 to 2, given every hour until the circulation is regulated. After this is effected, it should be continued in drop doses, every two hours. The headache calls for belladonna, which may be taken in doses of gtt. 5, once in three or four hours, until the pain in the head is relieved. If the pain in the spine is also relieved by it, it may be discontinued for a time, until the symptoms return or until delirium occurs. If there is severe pain in the back part of the head, with vertigo, paralysis of the lower extremities, convulsions, emprosthotonos, stupor, and feeble and irregular pulse, gtt. 3 to 5 of cannabis indica may be given every two hours. If this drug fails to give relief to the paralysis, gtt. 5 of tincture, or fluid ex. of gelsemium may be given every three or four hours, until it subdues these symptoms. At the same time, I have always found strong counter-irritation (produced by turpentine), all along the spine, a good auxiliary.

Sunstroke.—Prof. H. C. Wood, of Philadelphia, says this disease is the result of paralysis of the vaso-motor nerves, or of some controlling centre of the brain, which influences the production of heat in the body. Some writers believe that it is from an imperfect decarbonization of the blood, while others think that it arises from hyperæmia of the pia mater, and other portions of the brain. Arnt says it is a diffuse encephalitis, but there are others who declare that it is caused by venous hyperæmia, due to a diminished activity of the heart's action. These are all conjectures, however.

CAUSES.—All writers agree, however, that this affection is caused by the influence of intense heat, and not from mere exposure to the sun's rays, as first alleged.

PATHOLOGY.—Post-mortem investigations have not thrown much light upon the real pathology of sunstroke. Prof. H. C. Wood, in his paper on "Thermic Fever," written in 1872, states that "the right heart and pulmonary arteries, with their branches, are engorged with dark fluid blood. There is also venous congestion of the lungs and entire body. The heart, especially the left ventricle, is rigidly contracted in every case, a condition caused by coagulation of the myosin." It is uncertain however,

whether the above conditions are really post-mortem, or ante mortem phenomena. Sunstroke seems to attack the unacclimated in preference to the old residents of a locality. The want of pure water also seems to give rise to the disease, and so does the use of spirituous liquors, fatigue, debility, bad ventilation and depression.

SYMPTOMS.—One of the first premonitory indications of the approach of "sunstroke," is an inelasticity of the muscles, general indisposition, debility, thirst and loss of appetite. There may also be dizziness or headache, and the chest may feel oppressed, breathing be frequent and strong, the throat be dry, and swallowing be painful. The voice too is apt to be more or less changed, becoming hoarse and weak. Much anxiety and restlessness of mind exists, the extremities grow numb, the patient becomes drowsy and restless, and there is often vertigo or bleeding from the nose, paleness of the face with redness of the conjunctiva, and very often notable weakness in the knees. Sometimes there is nausea, vomiting, cold perspiration, and sudden diarrhœa. The mind also becomes clouded and confused. After these symptoms appear, if nothing is done to ward off the attack, the "stroke" will speedily follow. The patient falls down, as if from a blow upon the head, with entire loss of sensibility and consciousness. Subsultus tendium, partial spasms, violent convulsions, or paralysis of the spinal cord now set in, so that the limbs lie motionless. The face may at first be pale, but it soon becomes flushed, suffused and sometimes cyanosed, finally assuming a dull leaden color. The respiration may be oppressed, slow, sighing, rapid, deep, rather difficult, and very often stertorous. The pulse soon becomes feeble and very quick, finally becoming irregular, intermittent, small and thready. The premonitory symptoms, and the intense heat of the season distinguish this disease from apoplexy. The latter may occur in hot weather, but it does not show the above well marked prodrome. Sunstroke is not necessarily fatal, but often leaves very unpleasant effects,

TREATMENT.—If the patient can have attention when he feels the above depressed symptoms, the disease may generally be averted, by the use of moderate doses of gelseminum. This drug should be administered in doses of gtt. 20 to 25 (of the saturated tincture of the green bark, or the root), every two hours, until the patient is relieved, which may be with the first or the second dose. Gtt. 10 may then be taken every two hours, to prevent a return of the morbid symptoms. If the patient has already fallen, and has lost consciousness,* glonoine (nitro glycerine) acts well, in doses of gtt. 1 to $\frac{1}{2}$ of the first cent. dilution in water, repeated

*See Author's New Remedies.

every two or three hours, if the first dose fails to relieve the symptoms. If there is still consciousness, but dizziness, redness of the face, and dilated pupils, gtt. 2 to 3 of belladonna may be taken every three hours, until the patient is decidedly better. If none of the above remedies seem to relieve the head, the patient should inhale gtt. 5 of nitrite of amyl, every half hour, until he is well relaxed, and then belladonna will relieve.

Apoplexy.—This disease is characterized by a sudden loss of consciousness due to intra-cerebral hæmorrhage and the pressure of clots of blood upon the brain. These clots of extravasated blood are sometimes as large as an apple, and sometimes not larger than a marble. They may be round or spread out in layers, and there may be one or several of them.

VARIETIES.—An overloaded condition of the vessels of the brain gives rise to that variety of apoplexy which is appropriately called *congestive apoplexy*. Hæmorrhagic or sanguineous apoplexy, however, is the most frequent in occurrence. This form consists in the rupture of a vessel, from which the blood becomes extravasated upon the brain or in its substance, pressing upon the nervous masses. It comes without warning in most cases. The patient is generally suddenly struck down, devoid of all consciousness or voluntary motion. This is called *primary apoplexy*. Sometimes there may be premonitions, such as headache, giddiness, fulness and throbbing of the arteries of the head, bleeding from the nose, dimness of sight, contraction or dilatation of the pupil, noises in the ear or deafness, flashes, mist, etc., before the eyes, vomiting, numbness or tingling of feet or hands, unsteady movements of the limbs, and partial paralysis in the muscles of the face, or of the limbs. The patient falls into a comatose state in some instances, and in others only becomes drowsy, and finally comatose. This is called *ingravescent apoplexy*, because the symptoms gradually grow worse. It is a far more serious type than the primary form, because we here have evidence that the cause of the symptoms are still in operation, and that the case is hæmorrhagic in its origin. Moreover, the brain has undergone organic and permanent pathological changes. A primary case may be of the congestive variety, which may be finally relieved without leaving any injury,

SYMPTOMS.—Some of the first indications of approaching apoplexy are headache, giddiness, faintness, sickness at the stomach, oppressed pulse, with reaction following. In the early stage of an ingravescent case, before the patient becomes comatose, there is generally very great depression in the circulation from the shock to the nervous system. The surface also is cold, pale, and clammy, and the pulse frequent, small and weak. As coma comes on, the pulse grows full, slow and labored, and the surface becomes

warm, (being sometimes warmer than normal,) and rather moist; the countenance has a peculiar, bloated appearance, and is often rather congested; the pupils are insensible to light, and in many cases, largely dilated, (or one dilated and the other contracted); the respiration is labored and often stertorous from paralysis of the soft palate; the bladder becomes inactive; the urine is retained; and the bowels are sluggish, and apt to be constipated. Several of the above symptoms may occur as the result of dyspepsia or indigestion. Vomiting and headache are more important, as indications, when they come on suddenly without any obvious cause, and not on first rising in the morning. The vomiting may be continued beyond emptying of the stomach; and if these symptoms are associated with degeneration of the arteries, and albuminuria, we may reasonably infer that there is a clot of blood, large or small, in the brain.

PREDISPOSITION.—Men or women who have very large heads, large, broad necks, very broad shoulders, a well developed muscular system, (with which is associated very large cerebral arteries,) great heart power, and, of course, a vigorous circulation, (which drives the blood with force to every part of the system, but especially to the brain,) are very liable to apoplexy. Now, if the lungs become impaired or feeble in their functional activity, so that the blood is imperfectly oxygenated, congestion may result, and a tendency of the vessels of the brain to rupture. A little intemperance, either in eating or drinking, uncontrolled passions, excessive sexual indulgence, close mental labor, or anything that favors cerebral congestion, will develop apoplexy. Diseases of the heart or kidneys also favor the development of this disease. Apoplexy occurs most commonly after the fortieth year; rarely in early life. Cerebral hæmorrhage sometimes proves fatal, but it does not always kill instantly. I have seen some men live several years with this disease, and others die in the first attack.

CAUSES.—The direct cause of apoplexy is disease of the coats of the blood vessels, hence, the increasing tendency to the disease in advanced years. As old age comes on there is a gradual tendency to degeneration or ossification of the arteries and attenuation of the veins. This degeneration of the arteries, or their ossification renders them inelastic, and as the blood is forced through them by a strong heart, they give way, and apoplexy is the natural result. It is true that an aneurism, involving an artery of the brain, may rupture and produce apoplexy in those who are not constitutionally predisposed to the disease. Unsoundness of the body generally may be a predisposing cause of apoplexy. Granular disease of the kidneys and hypertrophy of the left ventricle of the heart may also predispose to this disease.

DIAGNOSIS.—Apoplexy is distinguished from epilepsy by the

latter's beginning with a scream, and being always attended with convulsions, and frothing at the mouth which symptoms do not occur in apoplexy. To distinguish it from poisoning with opium and alcohol, the history of the patient's previous habits must be known. The odor of the breath will determine whether or not he has been imbibing alcoholic liquors. The pupils should be examined to see if they are contracted as in opium poisoning.

TREATMENT.—Where there is a full, strong and quick pulse, dry, hot skin, aconite is indicated, and should be given in small doses, until a decided impression is made upon the circulation. I give of aconite, gtt. 20; aqua pura, 5 4; dose. a teaspoonful every hour. This remedy is far better than venesection and is not attended by danger. If the face is red and swollen, and there is strong throbbing of the carotids, convulsive movements of the muscles of the face or limbs, dilatation of the pupil loss of speech, suppression or involuntary discharge of urine, gtt. 3 to 5 of belladonna, every three hours, should be given until these symptoms are relieved. If there is a tendency to a calcareous degeneration of the coats of the arteries, phosphorus is needed. It may be given in doses of gtt. 2 to 3, largely diluted with water, or 5 1 may be added to 5 4 of water; dose, 5 1, ter die.

Thrombosis: Embolism.—Thrombosis may be produced by the formation of a clot of blood at the spot where occlusion exists, but embolism is caused by a clot or mass, which is formed in the heart and carried along by the stream of blood until the artery become so small that it cannot proceed any further. Emboli may consist of clots of blood, masses of fibrin, connective tissue growths, or chalky formations, which originate from endocarditis, aneurisms of the aorta, &c. Thrombosis owes its origin to some structural changes in the vascular walls themselves, such as inflammation, fatty degeneration, and ossification or calcification of the arteries, by which the speed of the current may be so slackened that the blood is finally blocked up. The left carotid artery is much oftener obstructed than the right. Sometimes several arteries are blocked up at the same time. Whenever the embolus is lodged in a terminal artery of the basal brain system, or is carried beyond the circle of Willis, it first causes red softening of adjacent brain tissue. Finally the red color fades into yellow, i. e., yellow softening of the brain, and if the patient should live a few months, this affected tissue is converted into a semi-fluid milky mass, which is called white softening, and which may be absorbed, leaving a cyst filled with a thin fluid.

PREDISPOSING CAUSES.—Rheumatism is one of the prime causes of embolism, but thrombosis has its predisposing cause in a morbid condition of the vascular system, and is mostly met with in the aged.

SYMPTOMS.—Embolism resembles an apoplectic attack, without premonition. In some cases there is no coma or loss of consciousness, but there may be delirium, aphasia, paralysis and vomiting, all of which may soon pass off. Thrombosis may come on slowly, with dizziness, headache and a general confusion of mind, loss of memory, numbness, coldness, and a creeping sensation in one side, or all over the body. Sometimes there are convulsive movements in some part of the body. There may be symptoms resembling an apoplectic fit. Occasionally there is no loss of consciousness. This condition may terminate in death, or the patient may recover.

DIAGNOSIS.—It is quite difficult to diagnose between embolism and hæmorrhage, unless we notice the predisposing causes, such as valvular disease of the heart, and diseases of the lungs. It is impossible to distinguish between thrombosis and hæmorrhage of the brain, except that thrombosis is not so frequent.

TREATMENT.—Whenever this condition shows inflammation, belladonna, in small doses, will always do good service. If it be due to an atheromatous condition of the arteries, phosphorus or phosphoric acid (Horsford's Acid Phosphate,) may be given, in small doses. If there is hemiplegia, nux vomica, in doses of grt. 1 to 2, every three hours, will be useful; but large doses do more harm than good, by increasing the force of the cerebral circulation. If there is vertigo, iodine may be used with good effect. If there be sleeplessness, moderate doses of tincture of hyoseyamus, say grt. 10 to 15, every three or four hours, will produce refreshing sleep. *Cocculus indicus*, in small doses, say grt. 3 to 5, may also be given with good effect. If there are convulsions, belladonna, in doses of grt. 5, may be given every three hours, alternated with grt. 15 to 20 of gelsemium.

Aphasia.—Under this head fall a variety of deficiencies of speech. When the patient understands what is said to him, and can express himself in writing, but is unable to make himself intelligible by means of words, (the organs of speech being in perfect order), his disease is called *ataxic aphasia*. This consists in an interruption between the idea and the organs of speech. Sometimes the aphasia does not amount to entire speechlessness, and the patient may be able to utter some words of one syllable, or it may be that he can only utter a few senseless syllables and words. *Ataxic aphasia* is occasionally complicated with *agraphia*—an inability to join either a letter or a combination of letters into intelligible words, although the hands may be able to perform other mechanical movements. *Amnesic aphasia* is an incapacity for recollecting words, although the idea is present and the patient can articulate. This form is due to an interruption between the idea and the word, the verbal expression being wanting.

TREATMENT.—Loss of memory for words and the power of ar-

tication have been cured with gtt. 1 to 2 of the 1st cent. dilution of *glonoin (nitro-glycerine) taken every two or three hours, until it gives relief. Bromide of potassium in very small doses, is also valuable in some cases of congestion, and stramonium has often proven very successful in cases where there is a want of co-ordination of the organs of speech. Where there is difficulty in understanding what the patient is reading, small doses of cro-nium will do good service. Where there is simply a difficulty in talking, I give thuja, in doses of gtt. 1 to 2, three or four times a day, and find it serviceable in most cases. When this affection consists merely in making constant mistakes in writing, ignatia amara may give relief in doses of gtt. 3 to 5, thrice daily. When the trouble is only absent-mindedness, *cocculus indicus*, in doses of gtt. 5, every three hours, is indicated, and may be alternated with Horsford's Acid Phosphate. If the patient is forgetful, and has headache, carbonate of ammonium is indicated.

Thrombosis of the Cerebral Sinuses.—The free passage of the blood through the vessels may be interrupted by various causes. Although the sinuses are of a rigid nature and incapable of collapsing, coagulation of the blood may readily take place in them. The propelling power of the heart may also be weakened, or inflammation of the coats of the sinuses may cause coagulation of the blood. Marasmus may lead to it when it appears among children, who have been much reduced by long attacks of diarrhœa and teething; also among adults who are feeble, and whose propelling power of the heart is impaired by various causes, such as exhaustion by long continued suppuration, cancer, and senile marasmus. This form of thrombosis is usually found in the longitudinal and transverse sinuses. The phlebitic form of thrombosis most generally originates from the disease of the bones of the cranium, but occasionally it accompanies otitis media from disease of the petrous portion of the temporal bones. In this case, it is located in the adjacent sinuses, that is, the transverse and petrous. This form of thrombosis may also arise from disease of other cranial bones.

SYMPTOMS.—When thrombosis is accompanied by marasmus in children, the symptoms much resemble those of hydrocephalus, as both conditions give rise to cerebral anæmia and collapse, followed in both by coma, and somnolence. If diarrhœa (in very young children) occur, and is followed by cerebral disorders of an active, motor kind, such as rigidity of the muscles of the back and limbs, there is a strong probability that thrombosis exists in the superior longitudinal sinus. This affection has not such definite symptoms in the adult, sometimes showing nothing but apathy and general

* See the Author's *Materia Medica* and also his *New Remedies*.

depression, such as headache, delirium, loss of consciousness, and more or less disturbance of the motor functions, either in the form of spasms or paralysis. In some rare cases, the veins outside of the cranium, which communicate with the diseased sinus within swell up, and epistaxis, cyanosis of the face, and fulness of the vessels takes place, when the affection is located in the longitudinal sinus. Œdema, of a limited space behind the ears may take place in thrombosis of the transverse sinus; or the internal jugular vein may have less blood in it on the side of the lesion than on the opposite side. If the sinus cavernosus is the seat of the thrombosis, there is apt to be hyperæmia of the fundus oculi, œdema of the eyelids and conjunctiva, and, in some cases, prominent eyeballs. There may also be neuralgia or paralysis of the motor nerves, from pressure, etc.

PROGNOSIS.—This is very unfavorable.

TREATMENT.—The carbonate of, and aqua ammonium both have a tendency to liquify the blood, and to thereby dissolve the thrombosis. Especially is this the case after free hæmorrhage, when the circulation is languid from want of cardiac force. Bartholow even advises the intervenous injection of aqua ammonium, ʒ 1 to ʒ 2 of water. I strongly advise this treatment in cases where large venous trunks, as the pulmonary artery, are blocked up by thrombosis. Again, he advocates this drug in sudden paralysis of the heart from chlorform, or from the bite of serpents or spiders. Drs. Brunton and Fayrer have shown that intravenous injection is without value. Ammonium is the most trustworthy remedy we have.

Dementia Paralytica.—This is a diffuse disease of the brain, in which the spine is also often implicated. It is characterized by a combination of physical changes with certain motor disturbances in the muscles of various parts of the body. These changes generally run a chronic course, and end in death, if not relieved.

PATHOLOGY.—In chronic cases, post-mortem examination shows atrophy of the brain. The dura mater lies in folds over the frontal lobes; the pia mater is generally more or less œdematous; the ventricles are often enlarged; the dura mater often adheres to the skull and may be thickened; and there are also extravasations of blood upon its surface, which give it either a red, yellow or livid color. The brain tissue itself shows interstitial encephalitis, which in time leads to the destruction of the ganglionic cells, and to atrophy of the brain itself. The spinal cord generally presents gray degeneration of its posterior columns, or granular-cell myelitis.

CAUSES.—Dementia paralytica may be hereditary, or abuses of alcoholic liquors or excessive mental labor may produce it. Excessive venery is one of the most fruitful sources of this disease, and syphilis and the morbid influences of acute febrile diseases

also give rise to it. It rarely ever occurs under the age of twenty years, and is most common between the ages of thirty and forty.

SYMPTOMS.—There may be premonitory symptoms preceding the final attack of this disease, such as dizziness, headache and rheumatic pains in the legs, which come and go suddenly, and are worse at night. Irritability, poor memory of recent events, while past ones are distinct in the mind, are indications; and frequently the muscles of the face and mouth may tremble, etc. The speech, perhaps, becomes lisping, as if the patient were intoxicated, and the voice is changed. Occasionally the trouble begins with an apoplectic attack. As it progresses, the patient is inclined to have exaggerated ideas of himself and of his possessions, and loses his natural affection for his family, squandering his money, if not prevented. In some cases the patient shows great anger, and even violent rage, rendering him dangerous to his friends or family. There may be a melancholic mood, or he may be in a hypochondriacal frame of mind, which again may change to excitement. Kleptomania is also of frequent occurrence, and the patient sometimes pockets whatever he or she may fancy, believing that they are only taking what belongs to them, and it is impossible to convince them of the contrary. The motor disturbances, when there is gray degeneration of the posterior column, consists of want of co-ordination, such as staggering upon shutting the eyes, a jerking, unsteady gait, difficulty in turning round, and trembling upon attempting to write. If granular-cell myelitis is present, there will be an awkward, shuffling, helpless gait, and unsteadiness in attempting to turn about quickly. In many cases there is more or less unilateral facial paralysis, and apoplectic attacks may frequently occur leaving behind hemiplegia, and although this may disappear, the mind still continues to degenerate. The attack may also be combined with unilateral or general epileptiform spasms, which occasionally end in the death of the patient.

Senile Dementia.—Senile dementia has symptoms corresponding to those of general paralysis, with the exception of a peculiar weakness of memory. Chronic alcoholism also resembles senile dementia. Senile dementia, as occurring in advanced age, may be known by a lack of motor co-ordination, or by the existence of marked hemiplegia, and the absence of extravagant delirium. It is almost always of a childish character, and is free from epileptic attacks. The apoplectic attacks of the aged are associated with serious permanent paralysis, provided they do not end in death. The dementia of old age is more regular, and not subject to remissions or intermissions.

TREATMENT.—The carb. of ammonium is one of our most successful remedies, taken in medium doses, three times a day. Phosphorus in moderate doses may alternate it, and the hypophosphite

of lime, in doses of gtt. 2 to 3, three times a day, will doubtless prove valuable. Especially where the memory is injured will the carbonate of ammonium do good. If this disease is caused by sexual abuses, *nux vomica*, in doses of gtt. 5, three or four times a day, will have a good effect.

Delirium Tremens.—*Delirium tremens* is chronic alcoholism, and occurs in consequence of excessive use of alcoholic drinks. It often follows the sudden withdrawal of stimulants from an habitual drunkard. It is a very strange disease, and is marked by varied symptoms, such as hallucinations of vision, the patient seeing demons, ghosts, rats, flies, birds, snakes, and horrid sights, such as great beasts, persecuting officers, etc. Those imaginations are always of a very frightful character. I have known some persons to imagine that a familiar friend or relative was pursuing them with the purpose of killing them. I saw two cases some time since where the patients fancied that their brothers were thus pursuing them to murder them, and they both cut their own throats to prevent this from being done. When I was attending my first course in the University of Georgia, at Augusta, there was there an unfortunate old inebriate, who was suffering from this disease, who would run and hide in some corner of the hospital, because he fancied that the students were an army pursuing him to put him to death. The victims have a wild expression, but seldom lose consciousness. They are rarely able to rest, unless they force sleep with soporifics. They are generally harmless, but in some rare cases they become violent, maniacal, and even destructive and dangerous to others, as well as to themselves. Tremor is very common with this condition, and tetanic and eclamptiform convulsions take place quite frequently. Different temperaments exhibit different signs of this morbid impress upon the brain. The disease is always worse after night, and the attacks last from a few days to two or three weeks. Post-mortem examinations of old toppers show various lesions of the brain, such as anæmia and dryness of the organ. The stomach, too, shows many lesions, such as a thickened mucous membrane, and there is fatty degeneration of the liver, and often hyperæmia of the kidneys. There are, of course, many other nervous effects of this disease not mentioned in the above catalogue of symptoms.

TREATMENT.—*Actæa racemosa* is a valuable remedy where there is sleeplessness, convulsions or tremors, headache and melancholia. Where there are hallucinations (especially at night) soreness about the stomach, or nausea, gtt. 1 to 2 of tincture of arsenic is required. In young subjects, where there is congestion of the head and great excitability of the sensorium, want of memory, indistinct speech, cramps in the limbs and trembling of the hands, *belladonna* will do great good, in doses of gtt. 3 to 5,

every three hours, but if ordered in larger doses it will do more harm than good. Where there are illusions of sight and hearing, *cannabis indica* often allays these, in doses of gtt. 5 to 6, every three hours. Gtt. 5 is the safest dose, although some few will require gtt. 10. If there is palpitation of the heart, vertigo, nausea, thirst and headache, I use gtt. 5 to 6 of *digitalis* (tincture), every three hours, or gtt. 3 to 5 of *convallaria majalis*, every two hours, until the heart is quieted. If there be persistent wakefulness, *gelsemium* sometimes produces sleep where morphia has failed. Occasionally the chloral hydrate has served me better than anything else, producing sound sleep, from which the patient awakes very much improved in mind. Where there are epileptiform convulsions, *ignatia amara*, in doses of gtt. 3 to 5, will give relief in a short time, and may be repeated every three hours.

Dipsomnia.—The long-continued use of alcoholic liquors, although the victims may not ever become intoxicated, shatters their whole system to its foundation. They soon lose their manliness, and every emotion of enlightened humanity; their constant craving for strong drink overpowering their very best intentions and strongest will-power. They have to struggle continuously with this mighty temptation, and too often are found yielding in their unequal conflict with a created appetite. Their better judgment dictates a cessation of the ruinous habit, but the strong cravings of an insatiable thirst call for more and more, and are never satisfied. If the subject of dipsomnia cease from indulgence for a time, he falls into a deep, melancholic mood, which shows a suicidal tendency, and to which only a resort to their accustomed stimulant brings ready relief. Hence, the poor victim plunges again into the profound depths of his iniquitous debauchery, and continues in it until he either dies with a ruined constitution, or becomes a habitual drunkard, and in this state terminates a miserable life of sinful excess. If there is any class of sufferers that the physician should pity more than another, it is the miserable drunkards, descending from a life of promise and hope to an untimely grave, and worse still, to the poor inebriates' hell. It is a noteworthy fact that many of our most talented men at the bar, in the field of science, in the halls of Congress, and leading physicians and mechanics, fall victims to this most destructive vice. The higher the individual stands in the scale of intellectual or moral being, the lower he falls down into the depths of human degradation.

PHYSICAL DEGENERATION.—Alcoholic drink produces varied effects upon the mind and body of different individuals. In some it gives rise to varied forms of insanity, and in others, to exaltation and absurd delusions. Again, we sometimes find forms of melancholy with religious mania, delusions of maltreatment by friends and relatives, and a kind of tranquil dementia, or imbe-

cility. Apoplectic and epileptic attacks are very often the result of long continued use of alcoholic drinks. Among the many physical disorders produced by chronic alcoholism or dipsomania may be mentioned various degrees of amblyopia and amaurosis, with atrophy of the optic nerve. Chronic inflammation of the stomach may arise from it, rendering digestion very difficult, and interfering very much with nutrition. The liver, too, is almost always badly diseased, and this condition often ends in cirrhosis. The kidneys frequently suffer with Bright's disease, and some die with anæmia. At first, the sexual appetite is greatly stimulated, and this finally ends in impotency. Children begotten in drunkenness are not only very nervous, but often epileptics or imbeciles from birth. Post mortem examination reveals meningitis hæmorrhagica, atrophy of the cortical substance, fatty degeneration of the ganglionic cells, thickening of the coats of the veins, thickening of the mucous membrane of the stomach, and occasionally flat erosions of the mucous coat of the stomach.

TREATMENT.—Nothing but moral suasion can reclaim the habitual drinker of alcoholic or fermented liquors. Of medicines, *nux vomica* may be tried, in doses of *gtt. 5, ter die*. Hyd. chloral quiets the patient.

Opium and Morphia Poisoning.—So prevalent has the habitual use of opium and morphia become, that I have been for years very cautious about prescribing it for any length of time. I am utterly amazed at the reckless and indiscriminate prescribing of opium by physicians, while they see the criminal effects of their carelessness. It is now the custom of most practitioners to prescribe either by the mouth or by hypodermic injection, laudanum, Dover's powders, or morphia, for every little pain and ache that their patients may complain of. The destructive habit of opium eating has increased alarmingly in the last ten years. It is now entailing untold misery and degradation upon thousands and thousands of unfortunate victims. It is difficult to detail the symptoms which may be found in works upon toxicology, to which the reader is referred. It is necessary, however, to mention here some of the chronic effects of this evil habit, viz.: general emaciation, pale, shrivelled dry skin, (looking like fish scales), flabby muscles, loss of appetite, feeble digestion, constipation, irritability of temper, giddiness, headache, sleeplessness, neuralgia, loss of memory, energy, and will power, and sometimes paralysis and diseases of the bladder. These effects are the results of opiates upon the substance of the nerves. The brain is in a state of hyperæmia, and very frequently fluid is found in the subarachnoidal spaces and in the ventricles. Sometimes there are sanguineous effusions into the brain. There may be other anatomical conditions in certain cases after death.

TREATMENT.—We may first, with propriety, give the remedies

for acute poisoning by opium. To remove the opium from the stomach, the stomach pump is used, but as that apparatus is not at the command of every country practitioner, he may have to resort to emetics. It requires active emetics, as there is great insensibility of the gastric nerves, caused by the obtunding effects of the opium. The sulphate of zinc is used by some, ipecac and lobelia by others. I have succeeded well with the tinctures of these last articles (made from fresh materials), or saturated tinctures, in doses of \mathfrak{z} 5 each, given every ten minutes, until thorough emesis takes place. Gr. 1-16 of apomorphia, given hypodermically by injection, will produce speedy emesis, or gr. $\frac{1}{2}$, given by the mouth, will give the same result. After the stomach has been entirely emptied, it should be thoroughly washed out with green coffee tea, or with green tea. This forms the tannate of morphia, which lessens the poisonous effect very much, and I think to a great extent neutralizes the opium. In addition to the tea of green coffee, freely taken, I always give tincture of belladonna, in doses of gtt. 5 to 10 at once, and repeat it in two hours if the first dose does not counteract the effects of the opiate. The patient should be kept moving all the time, to prevent complete narcosis. By these means I have just saved the life of a lady here, and that of several patients before her. I also saved in this way the life of a little girl of 8 or 10 years of age, who had eaten a large quantity of the blooms of stramonium. As an antidote to the opium habit, gtt. 15 of the tincture or fresh root of ipecacuanha, given three times a day, has proved valuable if other remedies fail. The patient's resolution is the best remedy in the world.

Tumors of the Brain and its Membranes.—The connective and epithelial tissues of the blood vessels and their sheaths are liable to become altered by the modification of newly formed elements, and by changes in their relations to their connective tissue and vascular distribution over the brain.

CAUSES.—Hereditary predisposition, the habitual use of alcoholic spirits, syphilis, blows or bruises of the skull, and tuberculosis may all give rise to tumors. These tumors, which retain the character of the diseased tissue, are called glioma, and are formed by proliferation of the glue-like cement—neuroglia. They usually resemble normal brain tissue, but sometimes assume a mucous character, and are soft. They afterwards, however, possess a firmer character, and are closely allied to sarcoma. These tumors grow very slowly, and may finally degenerate into a fatty tumor. The pineal gland may take on hyperplasia, in which case it presents a grayish-red, slightly lobulated, or smooth, round tumor, which may grow to the size of a walnut or in time, even larger. The sand tumor, psammona, is an inflammatory

proliferation of the cellular tissue, in which calcareous materials are deposited. It usually grows from the dura mater, at the base of the cranium, and is hard and hemispherical in shape, white and smooth, and attains to the size of a plum or cherry seed. The pigment cells of the pia mater may give rise to melanoma (a small-sized tumor), but this is of rare occurrence. The gray substance may take on hyperplasia, constituting neuroma, which attains the size of a millet seed or even of a bean. This tumor forms on the ventricular substance, on the white substance, or on the exterior of the brain. Cysts may also form from apoplectic effusions, abscess, and remollishment. The large vessels at the base of the brain are liable to form aneurisms, which sometimes burst and produce fatal apoplexy. This frequently happens in old toppers of an apoplectic tendency. Tubercles, of a grayish, yellowish, or yellowish-white color, may form into hard tumors, which attain the size of a hazel-nut, they are found mostly in the cerebellum. Besides the above, other tumors may form, as syphilitic tumors, sarcoma, and carcinoma or fungus hæmatodes, which appear upon the surface of the dura mater.

SYMPTOMS.—These tumors do not always give positive evidence of their existence. Autopsies have revealed in some cases large tumors of which there were no positive symptoms during the life of the patient. The brain, in these exceptional cases, becomes accustomed to the morbid growth. Depression of spirits, melancholy, aphasia, sleepiness, amplyopia, amaurosis, inequality of the size of the pupils, strabismus, violent headache, mono-lateral anæsthesia, neuralgia, occasionally paralysis, cramps of certain affected muscles, epileptoid attacks, etc., all accompany these tumors in individual cases, some in one and some in another.

TREATMENT.—It is plain that it is quite difficult to devise a treatment for these tumors, unless we can make an accurate diagnosis which, from the concealed nature of these tumors, is almost impossible. Phosphorus is indicated in some cases, and in others belladonna, followed by the phosphide of zinc, in doses of gr. 1-10, three times a day.

CHAPTER XXIII.

DISEASES OF THE EYE.

It may be well to define the parts of the eye, as this work may fall into the hands of young practitioners who may not be very familiar with the anatomy of that organ. There are three main enveloping coats of the eye, viz.: the sclerotic coat and cornea, the choroid, and the retina. The sclerotic coat or sclera is the outer and protective coat. It includes the cornea, and may be said to completely cover the eyeball. It is fibrous in structure, a firm, dense membrane, and in childhood of a bluish-white color, as seen through the conjunctiva. It becomes of a yellowish-white color in adult, and old age. The posterior portion of the sclerotic membrane is partly blended with the sheath of the optic nerve at its entrance into the eye, but a fine tissue from it and from the choroid is interwoven with the neurilemma of the optic nerve, and passes across the nerve entrance, being perforated like a sieve to allow of the passage of fibres to the optic nerve. This opening in the sclera is about the twenty-fifth of an inch in diameter, and the sieve-like membrane covering it is the lamina cribrosa. The sclera is a little over a millimetre in thickness at its posterior portion, and gradually becomes thinner as it approaches the front of the eyeball, until it receives the tendons of the four straight muscles near the edge of the cornea. Anteriorly, the fibres of the sclera are merged into the cornea and, near the periphery of the latter, it encloses the canal of Schlemm, which gives passage to a plexus of veins. The blood vessels are sparsely distributed over the sclera, and are thought to have no supply of nerves. Near the entrance of the optic nerve, however, and near the cornea, it is pierced by so many nerves and vessels for the supply of the other parts of the eye, that its firmness is considerably lessened in these places. The cornea forms the transparent portion of the globe of the eye, and is curved so as to form a segment of a smaller sphere than the sclerotic coat. It is a dense, firm membrane, about the thickness of the sclera, but thinner at the centre than at the periphery. It is divided into five layers: (1) the epithelial layer; (2) the elastic layer of Bowman; (3) the true cornea; (4) the layer of Decemet; (5) the internal epithelial layer.

The cornea is nearly transparent, but in old age the marginal portion becomes more or less opaque from fatty degeneration of its tissue. The opaque circle formed by this opacity is called the arcus senilis. The cornea contains no blood-vessels; and when

blood-vessels are seen in or upon it, disease is present. It is largely supplied with nerves. The choroid, or uveal tract is the second coat of the globe of the eye, and is a vascular and pigmental tunic covering the eye posteriorly, extending forward and thus forming a part of the ciliary body and the iris. These two tissues form what oculists call the *uveal tract*. The choroid, like the sclera, is pierced posteriorly to admit the optic nerve and the retinal vessels. Anteriorly near the equator, it is merged into a circle of plaits or folds, which form the ciliary body. The choroid is not divided into layers; but the delicate connective tissue, with the large vessels, and a large supply of pigment, make up the outer, and the capillary vessels the inner portion of this membrane or tissue.

The retina forms the third tissue of the globe of the eye, and may be regarded as the organized expansion of the optic nerve. It is divided into ten layers. The iris is a continuation of the choroid. It is an iridescent, finely colored membrane, the opening of which is called the pupil. It hangs as a vertical screen just in front of the lens. It is near the centre of the eye, but slightly towards the nasal side. The crystalline lens is suspended from the ciliary process, just behind the iris, and in contact with the pupillary margin. Posteriorly, it rests against the vitreous body which is hollowed out to receive it. It is transparent, and bi-convex in its shape, inclosed in a transparent capsule. The lens hardens and becomes less elastic as life advances, and in very old age is of a straw color, and then of a brownish-amber tint. The zonule of Zinn, or the suspensory ligament of the lens, is the medium through which the ciliary muscle acts upon the lens or its capsule in accommodation. The vitreous body, or the vitreous humor occupies the entire posterior part of the globe, between the lens and fundus, and is of a jelly-like appearance, nearly colorless, and contains about ninety-eight per cent. of water. It has neither nerves nor blood vessels. The aqueous humor occupies that part of the globe just in front of the lens, and is situated just posteriorly to the cornea. It is composed of nearly pure water, and when let out, soon reforms. The optic nerve arises from two roots, chiefly from the corpora geniculata, but also from the thalamus opticus and the corpora quadrigemina. This nerve is spread out upon the retina, and is the nerve of sight. The conjunctiva is the covering of the eyeball, hence called the ocular conjunctiva. It extends back nearly to the equator, and is there reflected on the inner surface of the eyelids. It is somewhat loosely attached to the sclera (except at the corneal margin), and is quite vascular. There is a fold towards the inner canthus called the *plica semilunaris*, a rudiment—rather like a third eyelid. Still nearer the inner angle is the *caruncle*. Just on the margin of each lid, near its inner angle, is situated the *punctum lachrymalis*, the opening

into the canaliculis, which leads to the lachrymal sac. The lachrymal gland lies in the lachrymal fossa, near the outer angle of the roof of the orbit itself. The gland secretes the tears, which reach the eye-ball through from six to twelve small ducts, which lie under the gland, and open into the conjunctiva at its reflected portion.

Diplopia.—Double images are produced by paralytic strabismus, and an operation for concomitant strabismus may also lead to this defect. Monocular diplopia may result from irregular refraction, from abnormal curvature of cornea or lens, from mal-position or dislocation of the lens, from inequalities of the corneal surface, from old cicatrices, or from bands of membrane stretching across the area of the pupil. The internal eye may be examined by means of reflected light. The examination must be made in the following manner: If a piece of glass is held just in front, and very near the eye, while a lamp is placed by the side of the patient's head, on a level with the eye, this throws the rays of the lamp into the eye, and illuminates it, so enabling the examiner to see the retina through the slip of glass. The ophthalmoscope is much used for this purpose. The oculist may acquaint himself with its use by examining the sound eye; thus becoming familiar not only with the use of the instrument, but also the appearance of the eye in a normal state. It is necessary to know the appearance of the healthy eye before we are prepared to diagnose the diseases peculiar to that organ. In order to make the examination of the eye satisfactory it is best to dilate the pupil with a weak solution of atropia, gr 1, to ten or twelve ounces of water. It is necessary in the examination first to exclude daylight, and then to place at the left side of the patient a good strong lamp, level with the eye. I then take a mirror in the right hand, putting it close to my own eye (holding the mirror some six or eight inches from the patient's eye,) and then turning it towards the lamp so as to reflect the rays into the patient's eye, it will so illuminate it that I can determine its condition. If the lens is opaque, however, we cannot obtain an illumination. Having illuminated the eye with the mirror, we may hold the convex lens in the left hand at the proper distance, to focus the glass upon the part we wish to examine.

Hyperæmia of the Conjunctiva.—This is a very common disease, and may be produced by excessive use of the eyes, or by optical defects, such as occur in asthenopia. The eye presents the appearance of a mild case of conjunctivitis, except that there is no discharge from the conjunctiva, and not much lachrymation, itching or smarting. There is not any heavy feeling in the lids, nor are there the same aggravations in the evening. Reading by too weak or too strong a light, or reading in the cars, by an arti-

tificial light, or directly in a glaring sunlight, often excite congestion or hyperæmia of the conjunctiva. This condition may be but a reflected irritation from more serious disease of the internal structures of the eyes. Continuous use of the eye for a length of time, will increase the pain and asthenopic symptoms in the eyes.

TREATMENT.—If there are optical defects present, they must be obviated by the use of appropriate glasses. All overwork of the eyes must be avoided. The eye douche will palliate this affection, if used with the lids closed. This may be used with a solution of the tincture or fluid extract of hamamelis, tincture of opium, gr. 1 or 2 of sulphate of zinc or gr. 2 to 4 of the acetate of lead, to half a cup of warm or cold water, thrown on the lids twice or thrice a day. In some cases, it will be better still to saturate a bit of cloth or lint with one of the above lotions, and let it be laid over the lids for an hour. Repeat this three or four times a day. If there is very great pain, the vapor of bisulphide of carbon (spirits of rosemary) with one-eighth its quantity of ether in it, or the vapor of chloroform, may be thrown against the external lid, for a few minutes at a time. The application may be made by putting the above lotions in a wide-mouthed vial, and holding the vial under the closed lids for a few minutes. This procedure is generally quite soothing. I have found a lotion of gr. 20 of belladonna to $\bar{3}$ 3 or 4 of water, applied as a fomentation, useful in quieting the pain and contracting the vessels, if they are enlarged. Gtt. 2 to 4 of belladonna, internally, three times a day, never fails to lessen the pain, or photophobia.

Conjunctivitis.—This disease is easily diagnosed, although it is possible for the physician to mistake it for other inflammatory affections of the eye. In simple conjunctivitis, instead of the usually invisible vessels of the conjunctiva, we have a complete net work of deep-red vessels plainly visible which are superficial, and movable at the touch of the finger upon the smooth surface of the sclerotica. In deep seated, severe forms of conjunctivitis, like the scrofulous, lymphatic, and granular varieties, we see close parallel lines of immovable subconjunctival vessels running towards the edge of the cornea, and forming a red or pinkish zone around its circumference. In iritis the zone is very distinct and is formed by the congestion of the deeper-seated vessels of the conjunctiva, and not by inflammation of the sclerotic coat. The vessels are on the sclerotica, but they are not a part of it. In scleratitis, or in epi-scleratitis, still another redness is presented, of a rather violet or purple color. This commonly appears in circumscribed patches, and may be mistaken for conjunctivitis. The bright red color and papular appearance of conjunctivitis, and the peculiarity of the deep-seated spots of scleratitis, render the differential diagnosis quite easy.

CAUSES.—It may follow slight injuries of the eye, contact with some foreign substance (especially of an irritating nature), exposure of the eyes to dust, strong vapors, smoke, or very cold winds, a strong glaring light, impure air, prolonged looking at near objects, and sometimes poisonous insects may get into the eye and lodge there for some time. This latter cause is common in the Southern parts of the United States.

SYMPTOMS.—These are itching and a sensation of heat in the lids, or a feeling as if there were sand in the eye. If there is any suspicion that any foreign body has really lodged in the eye, the lid may be everted, and the eye thoroughly examined. If anything is discovered, it may be removed with a bit of sponge, lint, very soft silk gauze, or by water.

TREATMENT.—If no foreign substance be found, I use gr. 1 of sulphate of zinc to an ounce of rose-water, using a few drops every four hours. If there is very great redness and enlargement of the capillary veins, I add gtt. 5 or 6 of the saturated tincture, or fluid extract of belladonna, or I put it in another ounce of water and use a few drops three times a day. In some cases that I have had, I have used gr. $1\frac{1}{2}$ of sulphate of zinc, gr. 3 of acetate of lead, and $\frac{3}{4}$ 1 of water, dropping in a little of this thrice daily. Sometimes I have treated with gr. 3 to 5 of boracic acid to $\frac{3}{4}$ 1 of rose water, I use it in the way of other lotions given above, and have found that the disease always yields very quickly to it. If there is great irritability of the eye and the vessels are greatly engorged with blood, I have found nothing that exerts such an immediate effect upon them as the tincture or fluid extract of belladonna. This remedy, given internally or applied locally, contracts the veins and thus forces the excess of blood out of them.

Catarrhal Conjunctivitis.—The symptoms of this form of inflammation of the conjunctiva are more marked than those of the simple form of the disease. The superficial vessels of the conjunctiva are highly engorged, and in old people chemosis is usually present. The edges of the lids are swollen, the palpebral conjunctiva is distended from serous infiltration (especially at its reflected portion), its papillæ are also enlarged, and its surface presents a velvety appearance. A secretion of clouded mucus takes place from the lids, sometimes alternating with a secretion of muco-pus. This discharge is sometimes profuse (but seldom so much so as it is in purulent conjunctivitis), and is slightly contagious in character. It will inoculate the sound conjunctiva.

SYMPTOMS.—The patient cannot see well at a distance, and there is a feeling of dryness and as if there was sand in the eyes. In some cases there is burning or smarting. The pain is rarely very

acute. These are subjective symptoms, and frequently vanish as the disease becomes chronic, which it will do if not cured.

TREATMENT.—In the acute stage the cold douche, or compresses of cloths wet in cold water, aid in lessening the inflammation. The internal administration of aconite, in doses of gtt. $\frac{1}{2}$ every hour or two alternated with belladonna, will be attended with good results. In cases where the pain is great I have used collyria of sulphate of zinc, gr. 1, $\bar{3}$ 1 of water or rosewater. I have alternated this with gr. 2 to 3 of boracic acid to the ounce of water. In some cases I have used gtt. 5 or 6 of the fluid extract of belladonna in an ounce of water applied to the eyes, thrice daily, with good effect. After the acute symptoms have passed off I have found gtt. 10 to 15 of euphrasia attended with good results, given every three hours. A little of the fluid extract of hydrastis, added to an ounce of water, often does good service, or gr. 1 of muriate or nitrate of hydrastin, added to $\bar{3}$ 1 of water. In cases where there is a profuse muco-purulent discharge, small doses of the sulphide of calcium may be given internally, while a solution of the nitrate of silver (say gr. 1 or $1\frac{1}{2}$ to $\bar{3}$ 1 of water) may be applied locally a few times. The sulphate of zinc (gtt. 2 to $\bar{3}$ 1 of water), will complete the cure. I have found it better in some cases to gradually lessen the strength of the solution of zinc as the disease gives way.

COMPLICATIONS.—Blepharitis, or ulceration of the cornea, may take place in this disease. Then, again, inflammation of the nares, throat, or bronchial tubes, may supervene, and call for other remedies. The exciting cause will always influence the selection of our leading remedies. This condition is produced by exposure, contagion, and abuse of the eyes; or it may follow some of the exanthematous fevers, and hence the treatment will have to vary to suit the cause of the disease. Simple collyria of boracic acid gr. 10, alum, gr. 2, water $\bar{3}$ may be used, or gr. 1 of sulphate of zinc, gr. 1 of nitrate of silver to aqua pura $\bar{3}$ 2 will often be found very serviceable. If the discharge assumes a puriform character, a solution of nitrate of silver is invaluable, gr. 5 to $\bar{3}$ 1 of water, applied to the lids while they are averted. The patient should close his eye, so as to bring the everted lids together, and the solution applied with a camel's hair brush. The solution may be washed off in a second or two with tepid water dropped from another brush, or from a bit of linen cloth. This course often cures the worst cases of this disease in a few days. It need not be repeated more than twice or thrice a week. If the congestion of the conjunctiva is high (as evinced by a bright red color and a swollen condition of the conjunctiva), and if the subconjunctival vessels are implicated, and there is pain and photophobia, irritating applications must be avoided, as they will always increase the disease. Gelseminum acts well in doses of gtt. 10 to 15, every three

hours, alternated with gtt. 2 to 4 of tincture of belladonna. A solution of gr. $\frac{1}{2}$ of sulphate of zinc to \mathfrak{z} 1 of water, or gr. 1 to 2 of boracic acid to \mathfrak{z} 1 of water, which do much good applied to the eyes.

Chronic Conjunctivitis.—In the chronic form of this disease the strength of the collyria will have to be much modified, from the strength of that given in the acute form. Some cases prove very tedious under any form of treatment. If the disease is purely local, and not associated with any other catarrhal affection, or trouble of the lachrymal duct, it may be relieved by a proper course of treatment. I have had singularly good success in some cases of conjunctivitis of long standing by touching the swollen papillæ at the retrotarsal fold with a smooth crayon of modified sulphate of copper. It should be as cautiously applied as a strong solution of nitrate of silver would be, and should be thoroughly washed off, and not applied again until the eye has fully recovered from the previous application. The internal administration of the tincture of arsenic, in doses of gtt. 2 to 4, three times a day, has proved efficient with me in many cases. The patient should avoid dust, smoke and strong winds, should use his eyes as little as possible, and avoid strong light.

Purulent Conjunctivitis.—Purulent conjunctivitis is a more severe and dangerous form of catarrhal conjunctivitis, and may be distinguished from ordinary conjunctivitis by having a greater amount of secretion, and more intense swelling of the lids. This is in consequence of the serous infiltration being sub-conjunctival, of the very great injection of the sub-conjunctival vessels (as well as of the increased vascularity of the conjunctiva itself), of the chemosis that is so frequently present, and of the large size of the papillæ of the mucous tissue, which are called granulations.

DIAGNOSIS.—If upon everting the upper lid the conjunctiva is sufficiently transparent for us to see the lines of the Moibomian glands, which run towards the tarsus, it is catarrh of the conjunctiva. If the infiltration is so very great as to hide these glands, it is purulent, granulated, diphtheritic, or some very grave form of ophthalmia. If it be purulent conjunctivitis, the cornea is apt to become involved, and hence the disease is much more contagious.

TREATMENT.—It is not uncommon to find a high fever during the inflammatory stage of purulent conjunctivitis, and the treatment must be antiphlogistic. Compresses of very cold water, or better still, of ice water, should be applied, and frequently renewed. Aconite, should be ordered in doses sufficient to control the pulse, that is to say, gtt. 1 to 2, every one or two hours, according to the demand in each case. If there be photophobia, gtt. 1

to 3 of belladonna may be taken every two or three hours, or if pain sets in and there is no photophobia, gtt. 15 to 20 of the tincture of the green root of gelsemium should be given every three hours in alternation with the aconite. This course has given me entire satisfaction in several epidemics of this disease. Leeches used to be applied, but I prefer cupping in the temple when it is necessary. After the inflammatory symptoms have been controlled, as evidenced by the subsidence of the swelling of the lids, by their pale red color, and by the relaxed appearance of the conjunctiva, then stimulating collyria may be used with good effect in most cases. I prefer the saturated solution of boracic acid, alternated with a solution of acetate of zinc, or sulphate of zinc, gr. $\frac{1}{2}$ or 1 to $\frac{5}{1}$ of rose water. These may be dropped into the eyes twice or thrice a day, and their strength may be reduced as the disease gives way. This reduction of the strength of the collyria I have always found essential to rapid improvement. If the cornea is involved, it is best to apply the collyria to the everted lids by means of a pencil brush, and wash it off immediately with tepid or gum water.

Military Ophthalmia.—This is a variety of purulent conjunctivitis often complicated with a follicular granulation. It appeared in the French and English armies stationed in Egypt, and from this received its name. It spread so fearfully that after the Napoleonic war, England alone had over five thousand blind, helpless soldiers to care for. It is quiet contagious in crowded armies, or among crowds anywhere. Bad ventilation and filth always increase its contagiousness very much, which seems to depend on atmospheric conditions.

TREATMENT.—If the fever runs high in the acute stage, aconite should alternate other proper remedies, such as small doses of the sulphide of calcium. After the force of the inflammation is subdued, I use a local application of the sulphate of zinc or boracic acid, in doses to suit each individual case, always reducing the strength as the disease yields. Sometimes the use of mild mucilaginous solution does great good, as a mucilage of quince seed, the pith of sassafras twigs, or the leaves of the wild cherry tree, steeped in water and dropped into the eye. Again, the vapor from a 10 or 20 per cent. solution of prussic acid, held under the eyes (so that the vapor can be conveyed to those organs with a funnel, with its large end held over the eye), will relieve irritation and gradually lessen the inflammation. A solution of the fluid extract of belladonna, gtt. 10 to $\frac{5}{1}$ of water, will relieve the pain, and contract the enlarged capillaries, thereby gradually lessening the inflammation. I have used a weak solution of sulphate of zinc, with happy results, say gr. $\frac{1}{2}$ to $\frac{3}{4}$ to the ounce of water, into which gtt. 10 of tincture of belladonna has been dropped.

Ophthalmia Neonatorum.—This is a purulent conjunctivitis,

which generally sets in a few days after birth. At first the discharge may be quite light, but sometimes it increases in a few days with very great rapidity.

CAUSES.—Leucorrhœa in the mother is a frequent source of this disease. Gonorrhœa in lewd women who happen to conceive, will also produce this condition in so grave a form as soon to destroy the sight of the child.

TREATMENT.—In mild cases where the discharge is whitish, sparse and of a mucous character, the free use of cold water (into which a few grains of boracic acid have been dissolved) will frequently check the further progress of the disease. Cold compresses may also be applied. The secretion should be frequently removed with a very soft sponge and tepid water. In severe cases the administration of aconite, in doses of 1–15 to 1–20, every hour, will aid in the reduction of the inflammation. Aconite may be alternated with grt. $\frac{1}{4}$ of the tincture of pulsatilla, or with gr. $\frac{1}{4}$ of sulphide of calcium, taken every two hours. This course will generally carry the case through to a favorable termination. Some cases, however, require great care, as they may become aggravated, and thus prove very obstinate and dangerous. If the case assumes a severe form, collyria of alum, gr. 5 to the \mathfrak{z} 1 of water, dropped into the eyes, or thrown into them with a small syringe, will often be attended with good results, If the above fail, gr. 2 to 3 of the sulphate of zinc to the ounce of water, will be proper, used the same way. Some cases do better with the use of collyria of the nitrate of silver, gr. 1 to the \mathfrak{z} 1 of water, used three times a day with a syringe. This treatment is indicated in those cases in which the discharge is purulent and very copious. If, in a few days, the discharge still continues unchecked, and a slight haze appears upon the cornea, I use a stronger solution of gr. 5 to \mathfrak{z} 1 of distilled water with a little salt in it. Sometimes this will give very speedy relief, improvement following the first application. It need not be repeated very often. After using this solution of nitrate of silver, cold compresses may be ordered to allay all irritation and excitement. Arsenic internally is required in old chronic cases.

Gonorrhœal Conjunctivitis.—It is not uncommon for persons who are suffering with gonorrhœa to have gonorrhœal conjunctivitis. It is either from sympathy or from an extension of the virus through the entire system. It sometimes happens, no doubt, from the patient's bringing the gonorrhœal virus in contact with his eye from washing his face after getting it on his hands. I saw a very bad chronic case of it once in a white child, nursed by a servant girl, who had contracted gonorrhœa, and in washing the child's face, or putting her hands about its eyes, she had transferred the virus of the disease to the child's eyes, and it had,

up to that time, (a period of several years) proved incurable. The active form of this disease is one of the most destructive kinds of conjunctivitis, and is very rapid in its progress. In its mild form it resembles the mild form of purulent ophthalmia, and will usually yield to similar treatment. If it result from the introduction of the virus into the eye, the inflammation is very violent, and the disease will prove very obstinate, finally destroying the sight, if not well treated. It has been my misfortune to treat some very grave cases of gonorrhœal conjunctivitis. There are quite a number of cases that prove to be comparatively mild, but with some subjects it is a grave disease.

TREATMENT.—One of the worst cases I ever saw, was that of a young man in the city of Columbus, Ga., who applied to me in 1845 for treatment, stating that a professor of the Savannah college and other eminent physicians had failed to cure him. Knowing that these experienced physicians had probably exhausted all the list of old remedies, I concluded just to try applying an ointment of calomel to the lids, and in the corner of the eyes. I accordingly made an ointment of gr. 4 to 5 to $\frac{3}{4}$ 1 of unsalted butter, and had him apply it well, working the lids so as to spread it over the entire surface. In a few days he began to improve and his health was entirely restored. Internally, gelsemium and aconite are the remedies in the active stages of the disease, gtt. 1 of aconite every hour, and gtt. 20 of gelsemium every three hours, until the inflammation is much reduced. At the same time a saturated solution of boracic acid should be dropped into the eyes three times a day, after washing them out with a little tepid water. If ulceration of the cornea happens to take place, which it often does, a strong solution of nitrate of silver should be applied to the ulcer with a pencil, washing it away immediately. Rheumatic iritis often follows this form of conjunctivitis. In this variety the biniodide of mercury answers very well, in small doses of say gr. 2 to 5 2 of iodide of potassium $\frac{3}{4}$ 4 of water; dose, gtt. 30, three times a day. A solution of belladonna is also effective, say gtt. 5, to water $\frac{3}{4}$ 4 of water; dose, gtt. 30, three times a day. This treatment, if properly carried out, seldom fails to cure the affection in a short time.

Diphtheritic Conjunctivitis.—This disease is very rare in America, but prevails epidemically in some portions of Europe, especially in Berlin.

SYMPTOMS.—It resembles gonorrhœal conjunctivitis, but is much more severe and more dangerous to the sight. The discharge at the outset is of a yellowish color, and flocculent, and the lids are much swollen, rigid, painful and very hot. In a few days the

*This preparation will not salivate, so it is harmless.

discharge becomes of a purulent character, and a fibrinous exudation takes place from the conjunctiva, the cornea becoming rather hazy and ulceration and sloughing ensue in most cases.

TREATMENT.—The treatment may be commenced with ice or cold water compresses, and gtt. 1 of aconite every hour, until a decided impression is made upon the disease. As soon as the discharge assumes the character of pus, the stimulating collyria should be used. This should be commenced with a solution of nitrate of silver, gr. 5, and distilled water \approx 1, applied to the closed lids with pencil. In doing this we must carefully avoid coming in contact with the cornea, by washing off the solution with water. Internally, the biniodide of merc., gives good results with iodide of potassium. Say merc. biniodide, gr. 2, iodide of potassium \approx 2, water \approx 4, dose a teaspoonful three times a day. If the cornea becomes ulcerated, gtt. 2 to 3 of tincture of arsenic should be ordered thrice daily. If the disease should not give way under this treatment in a few days, gtt. 2 of Donovan's solution is necessary every three hours, instead of the above preparations. It is very probable that the internal use of the sulphide of calcium, as an antiseptic, would do us much good in this form of conjunctivitis as in the previously described forms of the disease, and that in severe cases, the ointment of calomel would be of a great utility, as it is in the gonorrhœal form. It is certainly worthy of a trial.

Acute Granular Conjunctivitis.—One of the first symptoms of this form of conjunctivitis is severe pain in the eye, photophobia from ciliary irritation, and a sensation as if there was a foreign substance, like sand, beneath the lids. Upon everting the lids, the papillæ will appear swollen, and small, gray points will be found, which are true or follicular granulations. The conjunctiva gradually becomes more and more swollen, and a profuse purulent discharge is soon established. At this stage it is difficult to distinguish it from the simple purulent form of conjunctivitis. This purulent stage generally continues for several weeks or less.

CAUSES.—This form of conjunctivitis generally arises from contagion and deficient hygienic conditions. It spreads rapidly, like military ophthalmia. Neglect, or improper treatment, are apt to cause it to assume a chronic form, and this always proves tedious and often fatal to the eye; or, if it is not fatal, it is at least injurious to the sight, and produces such extreme photophobia that the patient cannot bear light.

Chronic Granular Conjunctivitis.—In this condition the secretion is diminished, the inflammatory excitement disappears, and the disease seems to be centered upon the upper lid, which keeps up the chronic inflammation of the eyes. The cornea is very apt

to become affected with pannus. This is a vascular development in the epithelial layer of the cornea. The granulations sometimes extend from the upper lid to the ocular conjunctiva, and from thence to the cornea, but pannus may follow friction and pressure upon the cornea by the roughened surface of the palpebral conjunctiva. When we see pannus, we may know that we have a case of granulation of the lid to deal with. These granulations may be both follicular and papillary, and are found on the inner surface of the upper lid. They appear mostly upon the reflected portion, and the pannus is generally seen upon the upper half of the cornea. It may finally extend downwards and encroach upon the pupil, impairing the vision very much. This may be the first thing that alarms the patient, and it may cause him to seek the advice of the physician or oculist. It is a dangerous condition.

TREATMENT.—This affection is very subject to relapses, and the treatment, to be successful, must be continued for months and sometimes even for years, before it is cured. Though obstinate, it is not a hopeless condition, for I have cured it after it had existed for years. Pannus (which is something growing over the eye), is usually an unfavorable omen to a successful issue and the unskilful physician may mistake it for pterygium, although this is quite a different formation. One of the first things to be done for this affection is to improve the patient's general health. As local applications, I have used a crayon of crystal alum or of copper, and sometimes one of copper and borax. Gr. 1 of nitrate of potassium acts admirably applied to the closed lids with a soft brush wet in water, or used in a saturated solution and immediately washed off to prevent injury to the cornea. I have found, however, in most cases of long standing, that the smooth crystal of sulphate of copper is one of the best applications, and soon removes the granulations. In some cases, where there is great irritability, and photobia, I think that it is best to use mild collyria, as gr. $\frac{1}{2}$ of sulphate of zinc to ℥ 1 of rose water, or gr. 2 of boracic acid to ℥ 1 of water. When the sulphate of copper is used it should always be washed off before the lid is closed. It produces pain in many cases, which may be lessened by the application of tepid water for a time, followed by the vapor from prussic acid, or water in which the prunus virginiana has been steeped. Cold compresses sometimes lessen the pain considerably. The patient should avoid using the eye just after these applications, and the crayon should not be applied until all the irritation, created by the application of the caustic to the lid, has subsided. Sometimes this may be three or four days, and again only two days. If there is adhesion of the lids upon rising, a mild rose ointment may be applied to them occasionally. In subacute cases, gr. 1 to 2 of the nitrate of silver may be required for a few days, and in some cases, gr. 1 to 2 to the ℥ 1 of distilled

water. It should be applied to the everted lids with a soft pencil brush, and then, in 15 or 20 seconds, washed off with another brush, dipped in weak salt water. Sometimes mild astringent ointments are required, such as gtt. 3 of tannin to 5 1 of cocoa butter applied on the everted lid, and allowed to melt there. A dry compress, just tight enough to exert gentle pressure upon the swollen lid, will also do much good. Chlorine water, properly diluted, may be used in some cases with good effect, especially where there is pannus from granulated lids. One writer recommends 5 2 of olive oil to 5 $\frac{1}{2}$ or 1 of spirits of turpentine. This would have to be used with caution, commencing with not more than 5 $\frac{1}{2}$ of the turpentine to 5 2 or 3 of the olive oil. Scarification of the swollen and granulated lids is recommended by some oculists, and has frequently proved beneficial. It can only be required however, in case of extreme tumification of the lids. It has always been my rule to give the patient an alternative course of treatment, for I have usually found this form of conjunctivitis associated with a scrofulous or strumous constitution. I usually give the iodide of potassium and alternate that with the tincture of stillingia, menispermum, phytolacca, or corydalis. Whenever the crayon seems to increase the irritation and lachrymation, and to produce severe and prolonged pain, it is doing more harm than good, and should be at once abandoned, a mild application being used instead, for some time. Occasionally the iodide of arsenic is required in doses of gr. 1-16, ter die.

Scrofulous Conjunctivitis.—Scrofulous ophthalmia has its primary seat in the conjunctiva, the iris, sclerotica and cornea, all becoming finally involved in the inflammatory process.

DIAGNOSIS.—One prominent symptom is great irritation of the ciliary body, and photophobia, which so affects the orbicularis that its spasmodic closure nearly renders it impossible to see the eye at all. When the ball is to be seen, if the patient will inhale a small quantity of chloroform or ether, the orbicularis will be so relaxed that the eye can be thoroughly examined. The palpebral conjunctiva will be found red, swollen, and looking like velvet on its surface. The ocular conjunctiva is injected, and the pinkish zone around the periphery of the cornea will be found well marked. The cornea will probably appear dull, opaque or ulcerated, and the iris, perhaps will be found contracted. There may also be more or less neuralgic pain in the ciliary body, and such intense photophobia that the patient cannot be induced to face a moderate light with open eyes. The disease, however, is not always of so severe a type, and the dread of light is much less in a great many cases. Upon examination in some cases, the cornea will be found nearly transparent, and the disease confined to the conjunctiva and edges of the lids. Again the cornea may be found unaffected, but

the ocular as well as the palpebral conjunctiva is diseased, and the inflammation is so deep seated as to reach the vessels beneath the conjunctiva, as shown by a pinkish zone around the edge of the cornea. The plexus of ciliary nerves is greatly irritated, and the eye is exceedingly sensitive to all external influences. Lachrymation is very free, and irritation is soon followed by most intense reaction. In chronic cases, these symptoms are not so severe. The ciliary irritation, and the consequent extreme sensitiveness of the eye are characteristic of this disease, and must not be forgotten or overlooked in the diagnosis.

TREATMENT.—Internal treatment is the principal weapon in this disease, which is only one of the visible manifestations of a constitutional taint, which must receive our special consideration. Local applications are at best only palliative. Warm fomentations soothe the eyes. Ciliary neuralgia may be met by applying gtt. 1 to 2 of diluted belladonna, to each eye, and the mild zinc ointment applied to the edges of the lids, will allay the irritation. The syrup of *rumex crispus*, tincture of *stillingia*, *phytolacca*, *menispermum* or *corydalis* may be taken in $\mathfrak{3} \frac{1}{2}$ to 1 doses three times a day, alternated with iodine.

Phlyctænular Conjunctivitis.—This is called herpetic or pustular conjunctivitis by some writers, and others consider it a phase of scrofulous ophthalmia. It most commonly occurs in children, and generally in those with a tendency to a scrofulous constitution.

SYMPTOMS.—The simple form may be recognized by a reddened point upon the inflamed base of the conjunctiva, very slightly raised, and usually situated at the limbus of the cornea, or upon the sclerotica, near its junction with the cornea. This red point frequently terminates in a small vesical, which may change into a small ulcer, and may finally disappear, leaving behind no trace of its existence.

TREATMENT.—The iodide of potassium, $\mathfrak{3} 2$, and the biniodide of merc., gr. 2, water $\mathfrak{3} 4$, seems to be the internal remedy indicated, and a little calomel dusted into the eye from a fine pencil brush, will allay much of the local irritation. This may be repeated once or twice a day, as may be required. The calomel has a specific effect upon this disease, and cannot be replaced by any other powdered substance. It will always do good, unless there is too much irritation; and, if that is the case, a fomentation of stramonium leaves, or of hops, may be used first, and then the finely powdered calomel, very cautiously applied. In this way the disease may be cured.

Phlyctænular Corneitis.—Excoriation and ulceration may attack the cornea, especially in the herpetic or phlyctænular variety of scrofulous ophthalmia. Some of the most prominent objective symptoms are those of herpetic conjunctivitis, but more

strongly marked, and attended with greater ciliary irritation, congestion and photophobia. Scrofulous ophthalmia, with great photophobia, is almost always connected with disease of the cornea. There is apt to be a vesicle in the limbus of the cornea.

TREATMENT.—The specific indication in this disease is tinct. of arsenic, given every two or three hours, in doses of gtt. 1 to 2, not more, for too much never fails to cause violent irritation of the stomach. For the photophobia, *spigelia* (tinct.), in doses of gtt. 10 to 20, three or four times a day, will be of material aid in relieving this affection of the eyes. The sulphide of calcium, alternated with *belladonna*, is also invaluable in this condition. Occasionally, where the disease is attended with pain in the ball, or dull headache, the tincture of *macrotis* is indicated, in doses of gtt. 5, every two hours, and will do good service. If there be neuralgic pain, *gelsemium*, in doses of gtt. 10 to 15 of the tincture, will be of material service, especially if there is ciliary neuralgia. *Belladonna* may alternate it, every three hours, until they bring relief.

Ulceration of the Cornea.—Ulceration of the cornea is almost always the result of weak vitality or impaired health.

SYMPTOMS.—It is characterized by more or less congestion of the conjunctiva, pain, photophobia and lachrymation. Strumous ulceration occurs in scrofulous ophthalmia, generally beginning as an opaque speck, and in ophthalmia neonatorum there is ulceration very similar in appearance to that which occurs in the disease under consideration. At first a grayish opacity appears, with a transparent center, which opacity soon assumes a yellow color, and as resolution sets in, the yellow changes back to a gray tint. Small blood vessels may be seen running from the sclerotic coat to the ulcer. In some cases there may be a transparent ulcer of the cornea, by which the patient's vision is not much clouded, he suffering only from irregular refraction of light, owing to the unevenness of the diseased surface of the cornea. In such a condition of the cornea, all objects appear distorted, on account of the superficial ulcerations upon the cornea. Crescentic ulceration of the cornea, as is described in gonorrhœal ophthalmia, is also very common in this affection. Sloughing ulcer (from suppurative corneitis in feeble constitutions), and the indolent ulcer of the aged, are frequently complicated with hypopyon and suppuration of the tissues of the cornea. The greatest danger in ulceration lies in the tendency to leave a scar or cicatrix more or less opaque upon the cornea, which may occur near the centre of the pupil. If this happens, it interferes with vision. Again, perforation of the cornea may set in, and if it does, prolapse of the iris may result, causing adhesion between the cornea and iris, and either distorting or displacing the pupil.

Iritis may originate from this, or the perforation may be small, and admit a deposition of matter on the surface of the lens capsule, forming capsular cataract.

TREATMENT.—A bandage over the eyes greatly promotes the healing of the ulcer upon the cornea, it being essential that the exposed surface of the cornea should be well protected from the air and light. A fresh layer of epithelium will then be quickly formed to cover the denuded nerve fibres, and thus the photophobia will be relieved. It is best to keep the pupil dilated by atropia whenever the ulcer is situated in the centre of the cornea, but if located at or near the margin of the cornea, eserine or pilocarpine may be used to contract the pupil and draw its edge away from the seat of disease. It is best for the patient to be well fed, and to remain in the light, as the bandage protects the eyes from dust, wind or smoke. No local applications are advisable. When ulceration occurs in the course of granular or purulent ophthalmia, such applications as are required for the diseased conjunctiva may be used and applied as directed under that head. No irritating substance, however, should, in any case, touch the diseased cornea. The internal treatment in ulceration of the cornea is determined by the symptoms existing in each case. In most cases arsenic will be required for the constitutional dyscrasia associated with this form of eye disease. The sulphide of calcium, in doses of a few grains, may also do much good, especially in those cases where there is profuse suppuration. Occasionally, where there is much frontal pain, belladonna, alternated with macrotis (tincture), will give good results. As the disease is often associated with derangement of the digestion, some good tonic will be required, as nux vomica, alternated with arsenic. If it be associated with syphilitic dyscrasia, I give biniodide of merc. in very small doses, say merc. biniodide gr. 2, iodide of potassium $\bar{5}$ 2, aqua $\bar{3}$ 3, dose gtt. 60, ter die.

Corneitis frequently accompanies the scrofulous form of ophthalmia, and diffuse corneitis is often found with purulent conjunctivitis, or a chronic form of granular conjunctivitis of the lids. Suppurative corneitis, which is often met with in purulent ophthalmia, or from mechanical injury of the eye, or from surgical operations on the corneal tissue, is a much more dangerous form of the disease. With this form, there is often severe ciliary neuralgia. The rose-colored zone around the cornea, the contraction of the pupil, and the chemosis, are all generally present. There is seen a gray opacity, which finally changes to a yellow color as the tissues become broken down, and the anterior chamber may be perforated. Extensive corneal abscess may finally ensue, and interstitial infiltration result, forming onyx. Pus may fall to the bottom of the anterior chamber, and suppurative

inflammation result, which may extend to the iris. Injuries of the cornea readily produce suppurative corneitis, especially in aged and enfeebled persons, and it may follow diabetes, cholera, typhus and typhoid fever. In the indolent form of corneitis, there may be but little pain, but the necrosis may extend to the whole globe.

TREATMENT.—In the severe suppurative forms of corneitis, the eye should be always bandaged at once, and considerable pressure be made upon the eye-ball. Pressure, properly regulated, has a direct controlling effect upon the suppurative process, thereby aiding in saving more or less of transparent corneal surface. If the inflammation runs high, a cold compress may be used to control it. And in some cases where the inflammatory symptoms are not marked, but there is considerable pain, hot compresses may do great good; as soon, however, as there is marked injections of the eye, they should be discontinued at once. If there is great pain, a few drops of solution of belladonna, say gtt. 5 or 10 to the $\frac{3}{4}$ 1 of water, allowed to fall into the eye, will generally relieve the pain, and more or less diminish the capillary enlargement. If the reaction is considerable, aconite, in doses of gtt. 1 every hour, should not be forgotten. As soon as ulceration of the cornea takes place, sulphide of calcium, in doses of gr. 1 to 2, should be given every two hours. The tincture of *cannabis indica*, in doses of gtt. 2 to 3, may alternate the calcium. If there is intense ciliary neuralgia, gelseminum, in doses of gtt. 20 every three hours, may be alternated with some gtt. 15 of the tincture of *macrotis racemosa*, or *cereus grandiflorus*.

Anterior Staphyloma.—If the cornea becomes perforated in disease of that tissue, staphyloma of the cornea and iris may result. In this case, the iris may fall against the opening, lymph being then secreted and a cicatricial tissue, something like the opaque cornea, formed. This being weak and inelastic under interocular pressure bulges forward of course, and forms a partial or total staphyloma of the cornea and iris. This is to be relieved by a surgical operation, provided the staphyloma is partial, but if it is total, the sight will be inevitably lost.

Episcleritis.—This affection usually commences in the form of a dusky-red spot, which is beneath the conjunctiva in the episcleral or superficial tissue of the sclerotic coat, near the edge of the cornea. As the disease advances, it generally changes to a purplish color. It causes considerable ciliary irritation, and also neuralgia, if it involves the edge of the cornea. It often occurs in the course of scrofulous ophthalmia, and is generally accompanied by conjunctivitis with more or less mucuous discharge. It must be distinguished from phlyctænular ophthalmia. It results from debility or over work. It is easily relieved by applying warm

fomentations and atropia if there is ciliary irritation. The eyes must have rest.

Hyperæmia of the Iris.—Hyperæmia of the iris would resemble simple iritis, were it not that there is no exudation.

CAUSES.—Over-exertion of the eyes in looking at near objects, small type, dim lamp light, or anything that strains the vision, will cause hyperæmia of this organ. It is indicative of congestion of the deeper seated structures of the eye. It often occurs, as stated before, in scrofulous ophthalmia and may result from the use of strong and irritating caustics.

TREATMENT.—This depends upon the affections associated with it. The proper treatment for iritis will relieve hyperæmia of the iris.

Simple Iritis.—In this disease, the conjunctiva and sub-conjunctiva are usually found injected, there being also a well defined rose-colored zone around the cornea. The pupil, also, is usually contracted and discolored, the iris is of a bluish color (which finally becomes greenish, the brown iris turning to a reddish brown hue), and there is generally a plastic exudation on the surface of the diseased iris. In grave cases, the lids may be tumid, and chemosis may set in, the posterior surface of the cornea being mottled with specks of minute depositions of lymph. There is also sometimes more or less photophobia and dimness of sight, and again great pain in the entire globe around the orbit, and in the temple. This pain is more intense at night, and there may be very great photophobia and lachrymation. In the acute form, diffuse retinitis and hyalitis are associated with it. These complications are only detected by the ophthalmoscope properly used.

Suppurative Iritis.—The symptoms of this form of iritis are somewhat similar to those of the above described form. The inflammation, however, is deeper seated, and the tissues of the iris become swollen and thickened. Syphilitic iritis usually also assumes this form, but rheumatic iritis, when it occurs in rheumatic subjects, is the simple iritis described above. In suppurative iritis there is a copious exudation, the swollen tissues of the iris impede the circulation, the vessels are congested, and very frequently large veins are seen on the face of the diseased iris. This is best determined by a lateral illumination of the eyes. Sometimes small yellowish nodules appear upon the edge of the pupil. The aqueous humor becomes so increased in quantity that the eye stands out more prominently than natural, and the admixture of this fluid with the pus and lymph thrown out by the inflamed iris, is such that it looks turbid. I had a case not long since, which had become chronic, and sight was lost. In this instance there was such a profuse quantity of aqueous humor, that the eyeballs stuck out very prominently and the pus and lymph caused

the entire globe to assume a whitish color. This was the case of a young man in this city, who can now see very well. I cured him by constitutional treatment. The iris sometimes is completely covered with exudation so as to be invisible, and the exudation may finally settle to the bottom of the anterior chamber of the ball, forming hypopyon. In syphilitic iritis tuberculous nodules are often seen on certain parts of the iris, which are of a reddish-yellow hue. Sometimes they project so as to touch the posterior surface of the cornea, but this is quite rare.

Serous Iritis.—Children born of syphilitic parents are liable to this form of iritis.

SYMPTOMS.—In this disease, there is increased secretion of the aqueous humor, which is also turbid and deposits minute specks of lymph upon the posterior surface of the cornea, hence the appellation applied to it—"keratitis punctata:" it is often associated with choroiditis.

CAUSE.—Changes of temperature, cold, rainy, windy, weather, and the excessive use of the eyes are very common causes of iritis. Rheumatic iritis is developed by whatever tends to produce rheumatism. In rheumatic ophthalmia, the pain often extends over the side of the face and head, and this form is very liable to relapse. It is sometimes of a traumatic origin, or again, may be caused by syphilis. It is believed that the majority of cases occurring among children are of a syphilitic character, especially those of an idiopathic nature. An acute attack may terminate in chronic iritis, but this is not very often the case, unless it be associated with choroiditis. This complication often exists.

PROGNOSIS.—In the early stages of the attack, where adhesions between the iris and the capsule of the lens have not formed, the prognosis may be considered favorable. If, however, such adhesions have taken place, it is very unfavorable, unless they can be overcome. Where the edge of the pupil becomes firmly adherent to the capsule, it causes such irritation from the efforts of the pupil at dilation and contraction, that it constantly tends to produce subacute attacks of iritis, which finally end in blindness.

TREATMENT.—One of our best remedies is atropia, which should be given in doses large enough to greatly dilate the pupil so as to prevent adhesions, if possible. I use gr. 4 to $\frac{5}{16}$ of water, a few drops of which should be allowed to fall into the eye at intervals of five or ten minutes, until it dilates the pupil; to be repeated whenever the pupil contracts again to any considerable extent. The pupil should be kept dilated to its maximum size in most, if not in all cases. Some mild cases may not require more than one or two applications of this solution to keep the pupil sufficiently dilated. This solution not only prevents adhesion, but gives the inflamed muscles of the iris perfect rest by the complete paralysis

(for the time being), of the constrictor papillæ. But for this paralysis, the iris would be in constant motion in attempting to regulate the size of the pupil in accordance with the light thrown upon it. If the eye does not tolerate atropia well, dubosia may be tried in its stead. If adhesions have already formed, an effort should be made to break them up by using, alternately, atropia and calabar bean, which will produce alternate dilatation and contraction of the pupil, and may thereby break up those adhesions already formed. As internal remedies, the main one, is aconite at first, while the inflammation runs high. The aconite may be alternated with small doses of belladonna, say gtt. 2 to 3, every four hours, so as to control the venous capillaries and prevent stasis. In the rheumatic form bryonia may be given, in doses of gtt. 4 to 5, every three hours, alternated with gtt. 10 to 15 of macrotis (tincture) every three hours. If there is very intense pain in the globe of the eye, warm medicated fomentations will do good service. In some cases small doses of tincture of spigelia, alternated with gelseminum, say gtt. 10 to 15, of each, every three hours, will relieve the pain and lessen the inflammatory excitement. * In the syphilitic variety, the biniodide of merc. and iodide of potassium (biniodide gr. 2, iodide of potassium $\frac{3}{4}$ 2, distilled water $\frac{3}{4}$ 4; dose, a teaspoonful three times a day) should begin the treatment, then other remedies as indicated. Atropia, twice a day, will generally keep the pupil sufficiently dilated to prevent adhesions and neuralgia. The patient should be confined to the house. The room need not be darkened, if the atropia is constantly used to prevent photophobia. If he go out, he should protect the eyes with blue glass.

Choroidal Hyperæmia.—This disease is of frequent occurrence, but as the vessels of this tissue (except in persons of light complexion) are almost entirely obscured by the pigment layer, it is quite impossible to diagnose, even with the ophthalmoscope. If, however, there is hyperæmia of the retina, hyperæmia of the choroid may be suspected. The iris and ciliary bodies are often congested with this tissue, and if this be the case, it may be diagnosed with a good ophthalmoscope in experienced hands.

TREATMENT.—Hamamelis may be given in doses of gtt. 3 to 5, every three hours, and a solution, say 1 part of it to 3 or 4 of water, may be dropped into the eye, and compresses of lint wet in it and applied over the lids. These remedies will generally relieve the affection in a few days.

Simple Choroiditis.—Simple or disseminated choroiditis is quite difficult to diagnose without a good ophthalmoscope, as the symptoms attending it are common to other diseases of the eye. Slug-

* Those who do not believe in this drug may try iris versicolor.

gishness and more or less dilation of the pupil is common in this, as well as in some other affections of the eye. There is also some failure of sight, and imperfect vision, so that but part of an object is seen at once. The external appearance of the eye may be natural, and there is seldom any pain. Upon examination with the ophthalmoscope, the choroid coat and the vitreous humor appear clouded, and there are small yellowish-white patches of lymph, either at the periphery, or about the macula lutea, or optic disc. Later, if atrophy of the choroid occurs, the white portion of this tunic is seen shining through in spots. If this affection originates from syphilis, white patches will be seen with a pale-red zone around them. Afterwards there may be consecutive atrophy of the optic nerve and retina. There is a great tendency to complication and to atrophy of the retina or optic nerve in this disease. The exudations may finally be absorbed (leaving but slight evidence of their former existence), and sight may be restored.

TREATMENT.—The cause of the disease will greatly modify the treatment. It often originates from syphilis, or some disorder of the liver and stomach may give rise to it, all of which complications must influence the treatment. The eyes should be protected from light by blue glasses, and the patient must avoid reading or using them in any way that strains them in the least. One of the best remedies is the iodide of arsenic, in small doses of say gr. 1-30 to 1-40, taken three times a day, well diluted. If there is pain or congestion, gtt. 3 to 4 of belladonna given three times a day, will remove this trouble in a few days.

Suppurative Choroiditis.—This is called ophthalmitis, and is a grave disease of the eyes, which runs its course rapidly.

SYMPTOMS.—The eye-lids are red, swollen, and rather œdematous, and there is so much chemosis, that the eye also looks swollen. The iris is discolored and rather bulged out, the eye-ball is sensitive to the touch, and the pupil presents, if clear, a yellow reflex from behind the lens, which is from the purulent infiltration of the vitreous humor. There is often great pain in and about the globe of the eye. The sight becomes very rapidly impaired, and in some cases is utterly lost.

CAUSES.—Suppurative inflammation of the iris and cornea (in diseased subjects), typhus, typhoid, pyæmia, wounds of the eye, surgical operations, or sympathetic ophthalmia may all cause suppurative choroiditis. It is also like most suppurative diseases, often provoked by high living.

TREATMENT.—The treatment should be commenced with cold compresses, which, if the inflammation runs high, may be dipped in ice water, and often renewed. The best internal remedy is aconite, in doses of gtt. 1 to 2, every hour, until the pulse is controlled, then every two or three hours to keep down all arterial

excitement. If, however, the cold applications do not relieve the pain, warm fomentations must be tried, and if the pain is still great, I advise the administration of a small quantity of gelseminum, say gtt. 20, every three hours. It requires very active treatment to save the sight in some cases of this disease, or the patient may even have to be turned over for surgical treatment in removing the ball.

COMPLICATIONS.—Tubercles of the choroid are seen sometimes by the use of the ophthalmoscope, with small, circular, rose-colored or grayish white spots generally in close proximity to the optic disc. This condition often exists with miliary tubercles. Tumors, ossification, carcinoma, and sarcoma are occasionally met with within the choroid, but fortunately they are rare.

Hyalitis.—Inflammation of the vitreous humor, notwithstanding the fact that it is usually associated with diseases of the other structures of the eye, occurs sometimes as an idiopathic affection. In simple hyalitis, with the use of the ophthalmoscope, a cloudy appearance of the vitreous humor may be detected, and delicate shreds of various sizes and shapes may be seen floating about in the fundus. It is not uncommon for this form of hyalitis to be associated with retinitis, choroiditis, or cyclitis. A suppurative form of hyalitis most generally supervenes in suppurative iritis or irido-choroiditis, and may occur after an operation for cataract or other severe injuries of the eye. It may also terminate in a very grave ophthalmitis, and destroy sight.

TREATMENT.—The treatment varies according to the primary seat of the disease, which is usually the choroid or retina. It seldom occurs in an idiopathic form. Galezowski asserts that the hyaloid membrane only can become inflamed. Effusion of blood or lymph, degenerated, fatty or pigment cells, may cause opacities of the vitreous humor.

Muscae Volitantes.—These are either opaque or transparent, and are best discovered by looking towards the white surface of the eye-ball. They are usually the result of over using the eyes. They consist of the debris of cells and shells of tissue, or fibre floating about in the vitreous humor, changing their position as the eye moves about in its orbit. They appear very much like small threads or globular bodies. Rest to the eyes, and improvement of the general health having been attended to, the use of blue glasses will aid in the cure. A hæmorrhage of blood into the vitreous humor may occur, either from a diseased condition of the coats of the vessels, or as a result of some traumatic injury to the choroid coat. Upon examination of the eye with the ophthalmoscope, there may be a darkened appearance of the fundus, or a red reflex of the same.

TREATMENT.—We must first remove the cause, let it be what it

may. Most commonly it lies in iridochoroiditis, choroiditis, or some disease of the deeper seated structures of the fundus. The tincture of hamamelis, in doses of gtt. 5, will doubtless be of much utility. The tincture of arsenic will perhaps do good.

Glaucoma.—This is a most dangerous affection of the eye, and without immediate surgical aid, will most likely terminate in blindness, and finally in degeneration of all the various tissues of the eye. It is readily discovered by a careful examination with a reliable ophthalmoscope. It may be either of acute, subacute or chronic form. The acute form is attended by increased tension of the eye-ball, which can be determined by touch. There is also fulness and swelling, as in iritis, conjunctivitis, or sclerotitis, but the tension of the ball indicates an attack of acute glaucoma. With this characteristic tension, there will most likely be periodic dimness of vision lasting for a few minutes or hours, and also presbyopia. The pupil will be more or less dilated, and on looking at a lighted lamp or candle, the rainbow halo will appear around it. This halo is red on its outer border, and a bluish-green on its inner edge. There may be ciliary neuralgia over the eye, or in the temple, face, or forehead. This neuralgia is so severe after the disease is fully formed, as often to cause vomiting, nausea and high fever. The disease may be mistaken for fever. The lids are generally puffed out and swollen, the conjunctiva is highly injected, and there is chemosis, and often cloudiness of the aqueous humor. The iris appears bulged out, and is discolored, and the pupil is dilated with decided tension of the eye-ball. The sight is much impaired, but is seldom totally lost in this stage. Sometimes there is photophobia and lachrymation, which are primary symptoms of this affection. The acute attack may pass away, and the sight become much better or even as good as ever, but finally the condition again occurs, and it continues to do so until the sight from repeated injuries is finally totally lost. It is called glaucoma from the reflection of a bluish-green color in the eyes. At first the ophthalmoscope may reveal nothing but a cloudiness of the cornea, but as soon as the disease becomes confirmed, the optic disc becomes more or less excavated, and the veins of the retina grow dilated, turgescient and rather tortuous in their course. At a later stage of this disease there may be arterial pulsation, and hæmorrhage and cloudiness of the vitreous humor. In some cases however there is such deep cloudiness that nothing whatever can be seen with the ophthalmoscope. The other symptoms however are so well marked that a diagnosis may be made in almost any case. Subacute glaucoma only differs from the acute form in having less severe symptoms and a less rapid course. The chronic form is an advanced stage of the acute form, in which the inflammation is fixed and gradually pro-

gressive, and in which the vision gradually grows dimmer and dimmer. Chronic, non-inflammatory glaucoma, may attack and completely destroy the vision of one eye, from the fact of aid not being sought in time. In these cases the eye may look natural, with one exception, the pupil being slightly dilated and looking rather sluggish. There may be increased tension of the eye-ball, and the ophthalmoscope will reveal excavation of the optic nerve. More or less inflammatory symptoms will finally be manifested, as in the inflammatory form described before. Absolute glaucoma, in which all perception of light has disappeared, may be known by a pale-greenish opacity of the lens. In this latter stage ciliary neuralgia is severe.

PATHOLOGY AND CAUSE.—The pathology of this disease is as yet rather obscure. There is generally, at first, an affection of the iris, ciliary body and choroid, and then an increase in the humors of the eye and an increased tension and excavation of the optic nerve. The cornea, sclerotic coat and retina also become involved. The secretion of the fluids of the eye is attributable to some irritation of the nerves controlling these secretions, which irritation is reflex from the sympathetic nervous system. Thus the increased fluids are the essence of the disease, and the great tension of the globe of the eye is the cause of the inflammatory symptoms. The mechanical pressure irritates the interior tissues of the eye, and produces inflammation, and finally degeneration, from lack of nutrition.

TREATMENT.—In the early stage of this affection we must attend to any constitutional dyscrasia that may exist in the system of the patient. In the advanced stage, sometimes nothing but iridectomy will prevent the frequent recurrence of glaucoma. Eserine has recently proved efficient in this disease, lessening the tension of the eye-ball. Bright light must be avoided and blue glass must be used to protect the eyes.

Retinal Hyperæmia.—In the active stage of this affection there is more or less photophobia and lachrymation, but in the passive or venous form, these symptoms are wanting. Upon examination of the retina with the ophthalmoscope, a reddened disc will appear from the congestion of the capillary vessels upon its surface. If only one eye is diseased, we may compare them, and thus easily diagnose this affection of the retina. In the venous form, the veins of the retina are much dilated, dark and tortuous.

CAUSES.—In many cases, we find this due to imperfection in the refraction or accommodation; and here the use of suitable glasses is the first remedy to be tried. Sometimes it is caused by exposure to a bright light, or by using artificial light too much. Occasionally disease of the stomach and liver will set in, and if

this be the case, the tincture of English celandine acts well, in doses of gtt. 15 to 20, three times a day, alternated with gtt. 4 or 5 of tincture of *cereus grandiflorus*, every three hours. If it exists in females with any uterine disease, I order tincture of *macrotis*, in doses of gtt. 20, every three hours, alternated with gtt. 4 or 5 of *belladonna*.

Retinitis.—In this condition, the ophthalmoscope reveals a veiled or hazy appearance of the retina, more decided at the optic disc, which is cedematous, and indistinct at its outer border. The retinal veins are dark and tortuous, and the pupil may be dilated and sluggish. There is generally no photophobia, pain, lachrymation, or other symptom which accompanies retinal hyperæsthesia.

CAUSES.—The causes are similar to the ones described in the previous affection of the retina, and hence the treatment will also be similar at first, but will have to be longer continued.

PROGNOSIS.—Our prognosis should be made very cautiously, as the sight is very apt to be injured (as the veil or cloud grows thicker and thicker), until sometimes the patient is almost blind. One great danger in this disease is atrophy of the retina, which permanently destroys the sight. Dark blue glasses will protect the eyes very much, but their use in looking at near objects is injurious. In the parenchymatous form of retinitis, the appearance of the eye in the ophthalmoscope is much more striking. Here the optic disc is of a reddish-gray color, and its outline is so indistinct and irregular that it is difficult to distinguish it from the retina. The veins are usually swollen and tortuous, but the arteries are generally diminished in size. Here and there the vessels may be hidden by a grayish exudation and extravated blood may be seen in various parts of the retina. There may also be hypertrophy, stasis, proliferation of cells, colloid or fatty degeneration and sclerosis. Sometimes the blood stasis may be relieved, the exudations and extravasations may become absorbed, and thus the patient may regain, more or less, his power of vision. It often ends, however, in atrophy of the optic nerve and retina. Very frequently the power of vision may remain tolerably good until the region of the *macula lutea* is invaded by the inflammation.

CAUSES AND TREATMENT.—A neglected hyperæmic condition of the retina will lead to this inflammation of the retina and optic nerve, and so will diseases of the heart, abdominal viscera, pregnancy in females, Bright's disease, diabetes, syphilis or affections of the cerebrum. Whenever the cause can be ascertained, treatment should be with a view to its removal. If the disease is of a syphilitic origin, the treatment is more apt to prove successful than when from Bright's disease or from cerebral affections. Arsenic is one of our best remedies in the nephritic variety. The eyes must be protected with blue glasses.

Optic Neuritis.—The optic nerve is the primary seat of inflammation, the affection being often connected with disease of the brain itself. Vision is much impaired, and in many cases atrophy of the optic nerve and the retina takes place, loss of sight being the legitimate result. A very reliable prognostic sign is obtained by testing the vision. If we find that the vision is materially diminished, we may prognose as atrophy of the nerve. If the condition originate from the brain, there will be headache (which may have preceded this affection of the nerve), and there will be giddiness, nausea, vomiting, loss of memory, taste, hearing and smell, and either paralytic or convulsive attacks. The primary ophthalmoscopic symptoms are hyperæmia and œdema of the disc, which is of a reddish color, indistinct in outline, and less transparent, the effusion of lymph in the optic nerve giving it a striated appearance. The inflammation extends to the retina, and renders it hazy. It looks dark and tortuous, and its arteries are shrunk and scarcely visible, the vessels being partly hidden in the infiltration. There may be bloody extravasations around the disc. In the cerebral form, the inflammation is limited more to the optic nerve.

TREATMENT.—The treatment varies according to the cause, the general health of the patient, and the peculiarities of each individual case. Arsenic is a good remedy in ordinary cases, in doses of gtt. 2 to 3 of the saturated tincture. If the cerebrum is affected, phosphide of zinc, in doses of gr. 1–10 to 1–15, three times a day, will doubtless prove of much utility. The chloride of gold and sodium, in doses of gr. 1–50, three times a day, is also effective in this disease. In many cases the iodide of potassium will prove of much value. In the early stage of an hyperæmic condition of the optic nerve and retina, belladonna, in small doses of say, gtt. 1 to 2, every two hours, will do good service. If there is great determination to the head and face, I find gelsemium very useful, in doses of gtt. 20 to 25, every three hours. If there is frontal headache, the tincture of macrotis is indicated, in doses of gtt 20, every three hours. If there is dimness of sight early in the disease, I order tincture of spigelia, in doses of gtt. 10 to 15, every two hours. Some cases, of cerebral origin, will be benefited by phosphorus, in small doses.

Atrophy of the Optic Nerve.—The term amaurosis may be confined to degeneration or to primary disease of the optic nerve. A marked symptom is dilated and sluggish pupils, and when the eye is totally blind, its complete immobility affords another sign. In spinal amaurosis, the pupil may be somewhat contracted. Upon examination with the ophthalmoscope, the disc is pale (from attenuation of the small nutrient vessels on its face), there is bluish, or bluish-green discoloration (especially in spinal amaurosis), the

retinal vessels are generally much diminished in size, sight is more or less impaired, and the field of vision is contracted. Our prognosis will rest upon the limitation of the field of vision. Blindness comes on very rapidly, but if the vision is equilaterally contracted, total blindness is not apt to ensue, unless some new cerebral symptoms manifest themselves. The patient is likely to be troubled with dark spots before his eyes, which sometimes interfere very much with the sight.

CAUSES.—Meningitis of the base of the brain is a frequent cause of this disease, especially in the chronic form. Tumors, or pressure upon the optic nerve, also give rise to it, and disease of the cord.

PROGNOSIS.—If blindness comes on suddenly it is to be considered unfavorable, especially in very young persons. If the disease remains stationary for some time it is to be regarded as a favorable sign, but as an unfavorable one where it progresses slowly but surely. After the amaurosis has continued for some time and the field of vision is not contracted, there may be a favorable diagnosis. If the line of distinct demarcation between the good and poor field of vision be well defined, it is a favorable sign, but when the field of vision contracts irregularly in both eyes at once, or in quick succession, it may be regarded as unfavorable. Scotomy in the centre of the field of vision is very unfortunate, especially, if the field be much contracted.

TREATMENT.—This must of necessity differ to suit each case. It is to be treated similarly to optic neuritis. The constant current of a good battery is invaluable in neuro-retinitis, amblyopia, and progressive atrophy. Small and repeated doses of *nux vomica* have proven valuable in some cases.

Amblyopia.—By this term is to be understood imperfect vision, in which the affected eye presents no very marked symptoms without the use of the ophthalmoscope, and in which the imperfect vision is not due to anomalous refraction. This word amblyopia is used to express impaired vision from any cause except optical defect. In cases where glasses fail to improve the acuteness of sight, the patient is amblyopic. The imperfection of vision is not attributable wholly to deficient refractive power, but to some disease of the fundus of the eye-ball, discoverable only by the ophthalmoscope in the hands of a skillful oculist.

DIAGNOSIS.—If the patient is requested to look through a pin-hole in a blackened card, it will enable us to tell this affection from anomalous refractive power. For if this improves the sight, then refraction is faulty, and the case will be benefited by properly fitted glasses. If the vision is not at all improved, the imperfection of sight must be sought in some disease of the inner structure of the eye, which can only be determined by the ophthalmoscope. Faulty refraction, can of course, be quickly de-

terminated by concave and convex glasses, provided they are at hand.

CAUSES.—Congestion of the brain and nervous structures of the eye, and the suppression of exhalation from the skin, may cause this disease, and so may the suspension of the catamenia in females. Very large doses of quinia often produce amblyopia, and so will an anæmic condition of the brain, that is, a deficiency of blood in the brain. Anæmia of the brain and retina may result from exhausting attacks of disease, from hæmorrhage, or in feeble women from long nursing.

TREATMENT.—In hyperæmia of the retina the tincture of *cereus grandiflorus*, in doses of gtt. 10 to 15, every two hours, will produce favorable results. This may be alternated with gtt. 3 to 4 of the tincture of belladonna, or if there is much pain, *cimicifuga* will do good in doses of gtt. 10 to 15 of the tincture. In some cases the tincture of *pulsatilla* has a good effect, in doses of gtt. 5, every three hours, especially, if in females with suppressed menstruation. *Bryonia* is signally successful. If from anæmia, iron must be given.

CHAPTER XXIV.

DISEASES OF THE EAR.

Inflammations of the external auditory canal are not as common as those of the middle ear. In some cases only the integument is affected, and in others the periosteum and bone are involved in the diseased process. When the area of inflammation is circumscribed, there will be abscesses or boils in the meatus, but when a much larger area is inflamed there will be what is called diffuse inflammation of the ear. The diffuse form of inflammation of the external auditory meatus differs from the circumscribed, in that it does not terminate in abscess, but as its name implies, is diffused over the integument the auditory canal. Inasmuch as the other cuticular layer of the tympanic membrane or drum-head is continuous with that which lines the meatus, there is always great risk lest this membrane should become involved. Children are very liable to this disease, which, if neglected, is very likely to terminate in perforation of the tympanic membrane, and injure the hearing. It ought, therefore, to receive prompt attention.

SYMPTOMS.—One of the first indications of this disease is an itching and uneasiness in the canal, followed by pain, and a sense of tension and fulness. Upon examination, the parts will be found red, tender, and more or less swollen, with painful mastication. If the inflammation is severe, the entire ear will be red and swollen, and stand out from the head. Should the periosteum become involved in the inflammatory process, there will be very intense pain in the lower part of the canal. As soon as a discharge commences, the pain ceases, and the swelling subsides. Otitis may occupy a week or ten days, when not interrupted by treatment. If the suppuration is prolonged, it may be followed by granulations or polypi, which soon yield to applications of caustics.

CAUSES.—Irritation of the ear by the use of ear-picks, and the application of strong liquids and oils, such as camphor, Harlem oil, or any of the essential oils, will produce diffuse inflammation of the ear. Sometimes, sitting in the cold air, in a window or door, will provoke this disease, especially in those who have once had it.

TREATMENT.—Von Troltsch advises the application of leeches on the tragus, first filling up the meatus with cotton to prevent the blood from falling into the inner ear and clogging it by coagu-

lation. Some writers recommend scarification of the cartilaginous wall, in the early stages of the disease, before suppuration commences. Prof. Roosa of New York, advises the application of warm water by means of Clark's aural douche. I have known poultices of boiled cottonseed to ease the pain very much, the sweating they produce relaxing the tension, and lessening the inflammation considerably. The internal use of aconite gives good results, in doses of gtt. 1 to 2 every two hours, and a local application of gtt. 2 to 3 diluted with a teaspoonful of water, may be rubbed on the external meatus. It relieves the heat and tension of the part. If there is a throbbing, boring pain, gtt. 3 to 4 of belladonna may alternate the aconite, diluted with water, and applied to the part twice a day.

Boils in the Ear.—Furuncles, or boils in the meatus auditorius are very painful. If they happen to be deep within the meatus they are more painful than when nearer the surface.

CAUSE.—They doubtless depend upon some local morbid condition, for they generally occur in persons who do not have boils in other parts of the body. They seem to occur with otorrhœa, and lotions of alum are said to produce them in some constitutions.

DIAGNOSIS.—The circumscribed core will distinguish the boil from ordinary forms of inflammation. It generally begins in the hair cyst, and the core is found at this point.

TREATMENT.—If the blood is strumous, sulphur, in small doses, should be used, or sulphide of calcium three times a day, in doses of gr. 1 or 2, will soon arrest the constitutional tendency. After the furuncle commences, if the top is touched well, twice or thrice, with the comp. tinct. of iodine, it may abort it, as it frequently does boils and carbuncles appearing elsewhere on the body. When much inflamed, the tincture of aconite is the remedy which should be applied to the boil once a day.

Abscess of the Ear.—The meatus is subject to abscesses, which often prove very troublesome, being attended with severe pain in the ear, which prevents the patient from sleeping. These abscesses are swellings of various sizes, flat or round, and of a very firm consistency, with broad bases, but without any well defined border. Their color may not differ from that of the surrounding integument, but they are always extremely sensitive to the touch. Sometimes the adjacent tissues are so intensely swollen that the auditory canal is quite closed, and the hearing is almost entirely suspended for a time. In some severe cases the external ear is so swollen that it stands out very straight from the head, and is very tender to the touch, the motion of the jaw in chewing causing great pain. There may be more or less general fever for a few days.

TREATMENT.—If the patient is seen at the beginning of the

trouble, warm fomentation of hops, or mullein leaves, may cut short the attack. If it is not thus aborted, the abscess should be opened as soon as possible.

Eczema of the Ears.—Eczema of the outer ear is a very common affection. After repeated attacks, the auricle and meatus become thickened, the calibre of the latter being more or less narrowed, and consequently deafness follows, to the extent of the narrowing of the auditory canal. This affection is characterized by a distinct eruption, with some redness, and small vesicles, which generally run together. There is also a viscid discharge from these vesicles which stiffen the linen. The vesicles appear in successive crops, and so frequently prolong the disease for years. The eruption in most cases, causes much itching and heat, and proves very obstinate.

TREATMENT.—We must moderate the inflammatory action at the outset. Lime water and some bland oil, as olive or castor oil, will sometimes do good service at first. If there is a discharge an application of starch and oxide of zinc, in equal parts, serves to exclude the air. If the auricle is raw, a wash of boracic acid (saturated solution), is a good application, or gr. 2 of sulphate of zinc to $\frac{3}{4}$ 1 of rose water, may be gently applied with a bit of cotton, or on a small stick. After the discharge has moderated, or been checked, and the parts become dry, the oleate of mercury will aid in the cure, applied with a fine soft pencil brush. At the same time, the patient should take the tincture of arsenic, in doses of gtt. 1 to 2, three times a day, alternated with gtt. 30 of berberis aquifolium, or the tinct. of dulcamara. Occasionally, after using the above remedies two or three weeks, the patient should have the sulphide of calcium, in doses of gr. $\frac{1}{2}$ to 1, three times a day, for two or three weeks, and then the old remedies again, or the tincture of sulphur for two or three weeks. If the ear continues to discharge a viscid fluid, gtt. 2 to 3 of the tincture of rhus toxicodendron taken for a week or two, will sometimes have a good effect. The red iodide of mercury ointment (say gr. 4 to 6 $\frac{3}{4}$ 1 of simple ointment) may be carefully applied, or the oleate may be used, made by adding gr. 2 or 3 of the biniodide of mercury to $\frac{3}{4}$ 1 of oleic acid.

Simple Otorrhœa.—Otorrhœa is a discharge from one or both ears, very often of a purulent character. It is a very common disease in children, and it sometimes attacks infants. It may first start from the lining of the meatus auditorius externus as a result of inflammation, but it afterwards becomes chronic, and then tedious and obstinate. Sometimes during dentition, the suppression of this discharge induces disease of the brain, and so it is best not to suppress it by local applications during that period, but to treat the constitutional vice. These cases are generally dependent

upon some strumous taint in the blood, which should always be removed.

TREATMENT.—Where there is a profuse, ichorous discharge, with debility, gtt. 1 to 2 of tincture of arsenic should be ordered three times a day. If there is caries of the mastoid process and ossicula, with a fœtid discharge, I administer gr. 1-50 of the chloride of gold, three times a day, or the sulphide of calcium in gr. 1 to 2 doses may be given thrice daily. Locally, boracic acid, (saturated solution), is an excellent remedy.

Aspergillus.—Aspergillus is an inflammation of the auditory canal, believed to be a secondary disease, resulting from diffuse inflammation of these parts. It is mostly found associated with eczema of the ear. Microscopical examination has demonstrated the identity of this fungus in the diseased auditory canal. Prof. Roosa states that he has never seen a case of this growth of vegetable fungus in a sound ear. He further says that this fungus is actually a mould such as is found upon damp walls, and bread that is kept dry.

SYMPTOMS.—There is itching and a sensation of fulness in the ear. Tinnitus aurium, vertigo, impairment of hearing, and more or less pain, not very acute but dull, are all present. By examining the meatus, whitish or sometimes rather blackish flakes may be seen adhering to the walls of the canal, which are often mistaken for epidermis or hard wax. I have seen these flakes completely block the canal, thereby destroying the hearing until they were removed. When this is done the mass may be soft. When the casts are removed the tissue beneath is found to be red and tender. This fungus soon returns after being removed, if not destroyed by proper remedies, both local and constitutional.

DIAGNOSIS.—The diagnosis cannot be certainly made without the microscope, in the hands of one experienced. Several varieties of aspergillus have been seen, but as the treatment for one variety does not differ from that of another, it is useless to separate them.

TREATMENT.—The treatment of this fungus is somewhat like that of other parasitic diseases, tedious, although rather simple. One of the first things to be done is to destroy the parasite, and then to treat the inflammation, for after the removal of the fungus, the inflammation still remains in some cases. The ear should be thoroughly syringed out with warm water, and then dried with lint and an astringent applied. Some cases have done very well by applying 50 or 60 per cent. of alcohol, or if the parts are very tender, one part of alcohol to three of water into which tannic acid may be dissolved *ad saturandum*. Eucalyptus (tincture), one part and glycerine one part is a good remedy.

Hardened Wax.—Accumulations of hardened wax do not con-

stitute a primary affection, but are a mere symptom of some other disease, hence their removal, though attended with temporary benefit, is not attended with final success. I have tabulated statistics of 165 cases (by Toynbee) in which the hardened cerumen was removed, 60 cases proved successful, 43 were much improved, 103 were considerably improved, and there were 62 that were very slightly or not at all benefited. In 105 of these 165 cases, some other primary disease existed, hence, the mere removal of the hardened cerumen did not prove a success. This wax in the external auditorius is indicative of obstruction of the eustachian tubes, or of a thickening of the tympanic mucous membrane, or of debility of the auditory nerve, or of ankylosis of the stapes. The ear should be well examined with a good instrument, in every case after the hardened wax is removed.

CAUSES.—The causes in cases not depending on other diseases are the narrow calibre of the meatus, the application of cold, the mixture of dust from a gin, flour, or thrashing mill with the cerumen, and also the habit of using the end or point of a towel or an *aurilave*, whereby the cerumen is pushed towards the membrana tympani.

SYMPTOMS.—One of the first symptoms is sudden deafness, which may follow a cold (by which the dermis is tumefied), getting water in the ear, bathing, etc. This deafness may suddenly disappear for awhile, with a cracking sound in the ear, caused by the movement of the hardened mass of cerumen. A feeling of fulness is often complained of, and not unfrequently there is giddiness or pain, and singing in the ear affected, or in both if both are attacked. These collections may remain in the ears for many years, if not treated properly. If this mass is very hard, it is liable to cause more or less inflammation of the dermoid meatus, and consequently should be removed.

DIAGNOSIS.—The speculum, with a good reflector, in a good light, is the only certain means of determining the true condition of the ear in deafness.

TREATMENT.—The first thing to be done is to remove the hardened mass of cerumen, which can be done by putting a few drops of equal parts of water and glycerine into the ear. This soon softens the wax, and then it can generally be removed with a syringe and warm water. Where these hardened masses of cerumen have been retained in the ear for a long time, it may be difficult to remove them. If the mass cannot be removed after the use of the above means, Prof. Roosa advises that a solution of bicarbonate of sodium be used with the syringe; a teaspoonful to half cup of warm water is sufficiently strong. If this fail, I have found the probe generally successful in breaking up the mass, and then the syringe and warm water will soon remove it. I have had cases, in

which I had to use fine forceps to dislodge the mass from the meatus. Where the hearing is still very defective, after the removal of these hardened masses of cerumen, Politzer's method of inflating the middle ear should be employed to replace the drum head, which, in such cases, is generally found sunken inward. Sometimes small flakes of cerumen still remain, and cause very unpleasant symptoms. If this happens, they may be seen by means of the reflector and the speculum, and then removed with the syringe and warm water, or soda water.

Foreign Bodies in the Ear.—I have known several bad cases of disease produced by unskilful attempts to remove foreign bodies from the ear or nose. Injudicious attempts to remove foreign bodies from the ear are calculated to do more harm than the foreign bodies themselves. After a thorough examination, if any foreign substance is seen in the ear, it should be carefully removed, so as not to press the substance against the membrane tympani or drum-head, for this would not only cause great pain to the patient, but might also injure the hearing in after-life. There are various means at our command, for the removal of foreign bodies from the ear, but the safest is the syringe and warm water. This seldom fails, if anything else would succeed. A loop of silver wire has also been used with success.

Insects in the Ear.—It is not uncommon for small insects to crawl or fly into the ear, and they soon produce very unpleasant, if not painful sensations. As soon as they come into contact with the membrana tympani, they produce extreme pain in the ear. I once saw a colored woman, into whose ear a wheat-bug had crawled, and fastening upon the membrana tympani, produced the most excruciating pain, rendering the woman almost frantic. A physician extracted it very easily with a long pair of forceps. I was called to see an old toper some years ago, into whose ear a green fly had crawled, while the old man lay in a profound stupor from intoxication. This insect had deposited its eggs in the ear, and they had turned to larvæ or maggots, annoying him greatly. I readily removed them with diluted spirits of camphor.

TREATMENT.—Labarraque's chlorinated sodium will kill the larvæ of most insects, and then the syringe will usually remove them. If it does not, the forceps must be used.

Catarrh of the Ear.—This is the most frequent of all affections of the ear, and one of the most common causes of deafness. Acute aural catarrh may at first consist in mere hyperæmic swelling of the mucous membrane, with more or less increase of mucous secretion, or the disease may extend into the most dangerous form of inflammation. The mild form may pass off in a few days, without impairment of function. It may be the result of a cold, of getting the feet wet, or of exposure of the ear to cold air.

SYMPTOMS.—This disease commences with running of the nostrils, dull pain over the eye-brows, sore throat, ringing noises in the ears, slight impairment of hearing (which is relieved by sneezing), and with coughing and blowing the nose. It involves the eustachian tube and tympani, and there may be catarrhal inflammation of the nasal passages, fauces, bronchial tubes, and sometimes the lungs even may be involved. There may also be redness of the membrane tympani, and increased secretion. Hearing is somewhat impaired. When the inflammation runs higher, the symptoms are more general. There will be sore throat, painful and difficult deglutition, and coughing, sneezing, or blowing the nose which increases the pain by forcing the air through the constricted and inflamed eustachian tube. Sometimes there are cracking sounds in the ear, and a sensation as if the drum was bursting, or else this last cannot be inflated at all, from the fact that the tube is completely closed up. In this case the patient's own voice reverberates. This form of inflammation is apt to affect the membrana tympani and the mucous lining of the whole cavity, and if not checked, results in the chronic form, in which the hearing remains impaired. The pain in this disease is in proportion to the degree of inflammation, and to the layers of the membrana tympani involved in the trouble. Aural catarrh is more common in early life than in maturity, but the disease is generally speaking more severe in adults than in children.

PROGNOSIS.—If acute catarrh of the ear does not run on to suppuration, and the membrana tympani does not become perforated, the prognosis may be considered favorable in most cases. But if secondary changes should take place in the fenestræ or labyrinth, the prognosis is unfavorable.

TREATMENT.—Some writers advise the local abstraction of blood by means of leeches, which has succeeded very well with me in connection with general treatment. The leeches should be employed early, and applied near the seat of the disease, six or eight in front of the tragus and some below the lobe of the auricle. Fomentations, or the vapor bath, applied to the inflamed ear have done well with me. I usually apply the steam from a pan of boiling herbs, such as mullein, balm, horsemint, etc., which should be very frequently repeated. If the pain is very acute, I apply the wilted leaves of stramonium to the ear, and a liniment of belladonna, camphor and aconite in equal parts, rubbing on six or eight drops once or twice in the day. Again, I use aconite and belladonna with the spray apparatus, using gtt. 1 of aconite and gtt. 3 of belladonna each time.

Chronic Otorrhœa.—Suppuration of the ear, called "running of the ear," depends upon a peculiar diseased condition of the middle ear, and is a very loathsome affection. It is mostly a

sequela of some previous disease, such as scarlet fever, measles, and of the exanthemata, and old, neglected catarrh, or it may originate from some injury of the internal ear. Children have it very frequently, and sometimes without any apparent cause. It is a condition of very serious import, and should always receive the most prompt attention. If it is not effectually treated, it may be followed by the loss of hearing. It is not only attended with bad health, and with all the disadvantages of loss of hearing, but it is also a source of great distress to the patient, as he is aware that he is a loathsome object to his friends. This chronic or sub-acute catarrhal inflammation of the middle ear, attended with suppurative inflammation of the tympanum, may result from small-pox, scarlet fever, measles, typhus fever, diphtheria, pneumonia, ordinary cold, or a scrofulous or syphilitic dyscrasia. The final results are, exostoses, polypi, diseases of the mastoid cells, caries, necrosis, meningitis, cerebral and cerebellar abscesses, pyæmia, phlebitis, paralysis, and sometimes even insanity.

Drs. Toynbee and Roosa both cite a great many cases of fatal cerebral disease which were the result of tympanitic affections. These fatal termination may take place after the patient has had otorrhœa for several years. The roof of the tympanum being in contact with the meninges of the brain, and the bone here being rather thin, porous, and sometimes entirely absent, the tympanum in some cases actually forms a portion of the cavity of the cranium. This fact should not be forgotten by aurists and physicians. The floor of the tympanum being sometimes membranous and bony, and lying somewhat lower than the floor of the external auditory meatus and the orifices of the mastoid cells and eustachian tubes, is often the seat of purulent suppuration. Polypi and exostoses of the tympanum may result from this disease, and the chronic suppuration may prove fatal, either by caries and pressure, or by blocking up the discharge and thereby producing meningitis. Suppuration of the tympanum is very apt to affect the mastoid cells, and acute periostitis or caries may result therefrom, extending to the meninges of the brain and proving fatal thereby. Caries may affect the temporal bone, and if so, renders the disease very dangerous, as it is apt to result in meningitis, abscess, phlebitis or hæmorrhage. It is quite difficult to determine when caries has taken place, but if suppuration persistently resists treatment, and is very offensive to the smell, caries may occur from the pus or from the products of its decomposition entering the circulation through the mastoid veins, or lateral sinus. According to the latest aural authors, it appears that from one-third to one-half of the cases of abscesses of the cerebrum arise from abscess of the ear. This is readily conceived, if we remember the immediate connection of the dura mater

with the roof of the tympanum. The cerebellum may contain collections of pus, especially after chronic disease of the mastoid cells. There may be caries of some portion of the temporal bone and disease in the mastoid cells, without perforation of the drum head, but such cases are rare. Small perforations through the drum-head are more unfavorable than large ones, or where the membrane is entirely destroyed.

SYMPTOMS.—One of the first symptoms of this disease is a discharge of pus from the ear, which varies greatly in quantity and consistency, and may only appear at intervals, or be continuous in its character. It may be scanty or very profuse in quantity. The patient is apt to suffer from pain in the ear when he or she takes cold, which pain is apt to be much less or entirely absent after a free discharge is established. Upon examination of the ear after discharge has ceased, there will be seen, at the bottom of the cavity of the drum, a hard mass of dried pus and wax. With chronic suppuration of the middle ear, hardened or impacted cerumen is often found, which may completely suppress the discharge. The drum-head, or *membrana tympani* in this affection is almost always found to be perforated or entirely destroyed, and very often with it comes the loss of the *malleus* and *incus*, and in some cases the *stapes* also. In spite of these losses, fair hearing may still remain in some cases, but usually this is very much impaired or entirely lost for life. If the fenestræ are seriously involved in the inflammation, the power of hearing is quite limited or entirely destroyed. The general health may or may not be very much impaired in these cases of old chronic suppuration of the middle ear. Some physicians, and most non-professionals, have a prejudice against arresting the discharge, but there is no real grounds for such fear.

TREATMENT.—If the discharge is very offensive, and there is caries of the mastoid process, or if the meatus externus is seen lined with pus, the drum seen to be perforated, the ossicula are destroyed, and there are fistulous openings through the mastoid process, or where there has been syphilis, or where the patient has taken mercurials to excess, the chloride of gold will be an appropriate remedy, and may be taken in doses of gr. 1-60, three times a day. If the patient is very feeble, and his health declining fast, and there is a profuse and ichorous discharge from the ear, I find the tincture of arsenic useful, in doses of gtt. 1 to 2 every three or four hours. If this disease occurs in persons, old or young, who have sores about the head, and especially behind the ears, and who have great tendency to ulceration on the body, black lead (graphites) is a valuable remedy, in small doses. If it occurs in connection with tonsilitis and catarrh of the eustachian tube, iodine in small doses, will aid in the cure, or a wash of boracic acid.

CHAPTER XXV.

DISEASES OF THE NOSE.

Catarrh: Coryza.—This is an inflammation of the mucous membrane, lining the nasal cavity, which frequently, in a few days, involves other parts of the respiratory mucous tissue. It is known by redness and swelling of said membrane, together with a discharge from it, which is thin and watery at first, but finally becomes muco-purulent. It is called catarrh, which means “a flowing down.” It is also called “cold” by the people, because they see it very often resulting from sudden changes of temperature, or from exposure to wet and cold air, while the body is perspiring freely. It is usually preceded by more or less indisposition, a sense of chillness, more or less weight about the head, and sometimes a dull pressure in the head, giving rise to the name *gravedo*, or *coryza*. There is hyperæmia of the mucous tissue which causes dryness, prickling, and constant sneezing, which is soon followed by the characteristic discharge. In mild cases the morbid process may end in disease of the nares, but it usually soon extends further. It generally very soon spreads from the mucous membrane to the epidermis, inflaming the nose-wings and upper lip. Sometimes it spreads upward into the frontal sinuses, or through the lachrymal duct to the lachrymal sac, and sometimes even to the conjunctiva, the Highmorian cavities, or backward into the retro-nasal cavity. In this case, it often affects the eustachian tubes, causing constant ringing in the ears, and some deafness. It may finally extend to the larynx, trachea and bronchial tubes, giving rise to a tickling cough. Catarrh may also be attended by neuralgia of the fifth pair of nerves, causing extreme suffering. It often prevails as an epidemic. Some persons have a predisposition to this condition, and there is a form of it which prevails in the summer season, called “hay fever,” which, doubtless, is produced by some peculiar irritant upon the mucous membrane. It is believed that the pollen of some plants causes this fever, which is like a severe cold.

CAUSES.—The most frequent cause of common catarrh, is sudden change in the atmosphere, or exposure of the body to a stream of cold air when the skin is perspiring freely. The vapors of burning sulphur, or those of iodine and acrid gases may also produce catarrh. It is one of the initial symptoms of measles. The epidemic form is caused by some peculiar (unknown) poison in the air, which is perhaps a deficiency of ozone. Some writers believe catarrh to be contagious, like purulent ophthalmia. The

average duration of simple catarrh is about two or three weeks, although some complicated cases last much longer. An acute attack, if neglected, or if dependent upon peculiar constitutional dyscrasia, often terminates in a chronic form, which is quite tedious. Nasal blennorrhœa, or purulent nasal catarrh, is characterized by a purulent secretion. This form is sometimes found in young babes as the consequence of infection from acrid leucorrhœal discharge at the time of confinement. Gonorrhœal virus may also produce it in a grave form. The gonorrhœal form is very obstinate.

TREATMENT.—In the stage of incubation where there is a dry state of the mucous membrane, headache, sneezing, running of the nose, roaring in the ears, thirst, dry cough, and hot and dry skin, gtt. 1, of aconite every hour, or gtt. $\frac{1}{2}$, every half hour, will be the proper remedy to commence with. If the discharge becomes acrid and burning, the carb. of ammonium in doses of gr. 1 to 3, every hour will relieve this peculiarity. If there is loss of smell and great soreness of the nose, the muriate of ammonium is an efficient medicine in doses of gr. 2 to 3, every hour. In cases attended with frequent sneezing and symptoms of asthma, *aralia racemosa* acts very well, in doses of gtt. 20 to 30 of the tincture, every hour. If there is a throbbing headache, excoriating discharge from the nose, hoarseness, and a burning, raw sensation in the throat, with dry cough at night, gtt. 1 to 2 of tincture of arsenic should be given three times a day, until these symptoms are relieved. Summer colds, with violent sneezing, are relieved by gelseminum and aconite, gtt. 1 of aconite to gtt. 20 of gelseminum every three hours. In some cases that I have treated, where there was a free, watery discharge from the nose, a burning sensation, frequent sneezing, redness and swelling of the nose, intense redness of the face, severe pulsating headache, injections of the conjunctiva, profuse lachrymation, dryness of the throat, and swollen tonsils, all of which are worse in the evening, belladonna will give relief, in doses of gtt. 1 to 2, every three hours. Where the catarrh is attended with alternate chills and fever, and fluent discharges from the nares, I order camphor, in doses of gtt. 2 to 3 of the saturated tincture, every two hours, and follow it up with such other remedies as are indicated. If there is soreness of the chest, cough with tough sputa, pain over the root of the nose and soreness of the eyes, gtt. 3 to 5 of tincture of sanguinaria may be taken every two hours, until the symptoms are relieved. If the disease occurs in children, and they have what is called the "snuffles," small doses of the carbonate of ammonium is the best remedy. If they are feverish I give gtt. $\frac{1}{4}$ of aconite every two hours.

Chronic Catarrh: Ozœna.—This form of catarrh results from

an acute attack in consequence of bad treatment or neglect, especially where the acute form was attended with a purulent discharge. It may and often does occur from a scrofulous or syphilitic dyscrasia in the person attacked.

SYMPTOMS.—At the beginning of the disease the mucons membrane becomes thickened and livid, and finally shrinks, becoming thin and pale. The epithelial cells are partially destroyed, or become turbid, the mucous membrane appearing uneven and opaque. There is generally a profuse purulent discharge of an offensive odor. The discharge frequently forms crusts, which firmly adhere to the membrane beneath, and which are of a greenish color, sometimes being mixed with blood. Chronic catarrh usually attacks persons of a scrofulous, or syphilitic taint. A patient may have chronic catarrh in a mild form, attended by a very profuse but thin discharge, or sometimes by a thick discharge, which is not offensive. It may entirely destroy the bones of the nose. It may also produce polypoid excrescences. It may then spread to the frontal and Highmorian cavities, or to the skin surrounding the nostrils, excoriating the upper lip, and infiltrating the cervical glands. This form of catarrh is always attended with the loss of smell. It is of a very intractable character as well as a very annoying one to the patients and their friends or associates.

TREATMENT.—If the nasal bones are sore to the touch and ulcerated, or if there is a fœtid discharge from the nose, ulceration of the nostrils, of a syphilitic origin, the chloride of gold and sodium is the proper remedy, in doses of gr. 1–50, three times a day. If scabs form in the posterior nares and behind the uvula, the carb. of barium is a valuable agent in doses of gr. 1–10, three times a day. Where it attacks the antrum Highmorianum, I use *berberis vulgaris*, in doses of gtt. 30, of the tincture, or *berberis aquifolium* in the same quantity. If there is caries, pain in the bones and neuralgia attending ozœna, I order the tincture of arsenic, in doses of gtt. 1 to 2, alternated with gr. 1–50, of chloride of gold and sodium, given every three hours. If there is a discharge of crusts, tinged with blood, or ulcers on the septum or mucous membrane of the nose, and if there is a fœtid discharge from the nose and loss of smell, I administer the bichromate of potassium in doses of gr. 1–10, every three hours. If the disease occurs in old syphilitic patients, or after the abuse of mercurials, the iodide of potassium is the proper remedy, alternated with the tincture of *stillingia*. Where there is a thick yellow, or green and fœtid discharge from the nares, and where the nose is swollen, and the alæ are ulcerated, *pulsatilla* is invaluable in doses of gtt. 3 to 5 of the tincture, every three hours, especially in females, whose menstrual discharge is irregular or scanty.

Influenza.—This is a type of catarrh that, in many respects,

resembles the preceding forms, but differs from them in several particulars. It not only attacks the respiratory apparatus, but also the digestive organs. It is also attended by considerable fever and pain in the head and limbs.

CAUSES.—The exciting causes are unknown. It often spreads very rapidly over certain localities.

DIAGNOSIS.—The distinction between influenza and common epidemic catarrh lies in its marked march over a country, and its entire independence of weather and season.

TREATMENT.—If the fever is high, and there is a dry cough, I find gtt. 1 of aconite very useful, given every two hours, and if there is headache and profuse discharge from the nose, gtt 20 of gelseminum may be added to each dose of aconite. If there is an acrid discharge from the nose, I have found small doses of iodide of arsenic one of our best remedies, or if there is profuse lachrymation, I use sabatilla.

Rose Cold: Hay Fever.—This is a febrile form of catarrh, affecting the conjunctiva and the mucous membrane of the nose and upper air passages, and is sometimes attended by symptoms resembling those of asthma. It attacks those who are peculiarly pre-disposed to it, and is very apt to occur every year about the time certain plants bloom, or when hay is being cut and stored away. In some persons it may occur at any time from May to September in certain localities.

CAUSES.—From experiments, carefully conducted, the pollen of flowers of certain plants has been found to readily excite the mucous membrane of the respiratory passages, and develop hay fever. The pollen of freshly dried grass quickly produces the disease, which is always more mild in the house than in the air. There are certain localities much less subject to attacks than others. It is a very rare disease in some portions of the North-west, and there are some places on the Northern lakes where it is entirely unknown. This was tested by a friend of mine in this city.

TREATMENT.—To entirely prevent this disease, the patient should be advised to take up his sojourn at the seaside, or on an island or narrow peninsula, where the air is least impregnated with the pollen of plants and grasses. There are also many high mountains entirely exempt from this disease. There have been a great many remedies proposed for hay fever, some of which are valuable. If the discharge from the nose is profuse, and if there is soreness of the throat, *arum triphillum* is the remedy indicated, in doses of gtt. 1 or 2 of the tincture, every two hours. Gtt. 2 or 3 of tincture of camphor, every two hours, is proper while the chilly stage lasts. After the fever sets in, I find nothing better than aconite and gelseminum, given every three hours in moderate doses. If it affects the trachea or bronchial tubes, I order euphra-

sia hourly, in doses of gtt. 2 to 5 of the tincture. It may be alternated with *grindelia*, in doses of gtt. 5 to 20.

Epistaxis.—Bleeding of the nose is often in consequence of an anæmic or chlorotic condition of the patient. It may occur with disease of the heart, lungs and spleen, and in that case is an unfavorable omen. In advanced life it indicates threatened apoplexy.

CAUSES.—Mechanical injuries such as a fall or blow on the nose are the exciting causes of this trouble, or hard coughing may produce it. It often occurs from suppressed menstruation or hæmorrhoids, and from picking the nose.

TREATMENT.—If from mechanical injuries, the internal remedies are aconite or arnica, but if from arterial congestion, attended with palpitation of the heart, aconite is called for. If from congestion of the head, attended with vertigo, I give belladonna, in doses of gtt. 3, every three hours, until the blood ceases to flow. I have usually aided the above remedies by applying to the bleeding surface small bits of lint, wet in a strong solution of Monsel's salt of iron. This seldom fails to quickly arrest the bleeding if pressed firmly against the bleeding vessel.

CHAPTER XXVI.

DISEASES OF THE FACE.

By closely observing the expressions of a patient's face, much may be learned of the degree and severity of disease, by an experienced physician. A delicate expression of the face together with long eyelashes and expressive, brilliant eyes, may be regarded as signs of constitutional tendency to tuberculosis. Thick upper-lip, and thickened alæ of the nose, indicate a scrofulous diathesis. Waxy and pasty skin marks chlorosis, while a peculiar pallor shows anæmia. A puffy condition about the eyelids, in anæmia, indicates albuminaria, or a sunken face marks diarrhœa, or other exhausting diseases, such as hæmorrhages, want of nourishment, etc. A wrinkled face in children or young persons is a sign of poor nutrition, and in boys or half grown lads points to onanism, or other bad habits. Spasmodic distortion of the sardonicus muscle, is a sign of severe irritation and inflammation of the brain, which prevails in pericarditis, diaphragmitis, ileitis and disordered menses. It is also indicative of colic and neuralgia. A stupid, rigid, staring and sometimes smiling countenance, is found in diseases of the brain, and in typhus and typhoid fever. A very sad, anxious and restless expression indicates disease of the heart, pleura, and lungs. A very apathetic, morose or long-faced expression points to disease of the bowels. Redness, if constant, indicates a tendency to gout and hæmorrhoids, or is a sign of indulgence in strong drink. A changing redness in children, reveals dentition, or in woman, approaching menstruation. A very vivid, bright redness of the face reveals disease of the nervous system, as hysteria, etc., or it often indicates a hæmorrhagic tendency. A dark, purplish redness marks a tendency to apoplexy, suffocation or congestion. A deep red spot on one side of the cheek occurs occasionally in encephalitis, and also in pneumonia, and occasionally in diseases of the heart and abdomen. An hectic flush occurs in phthisis.

Sudden paleness around the mouth denotes in children colicky spasms. A pale, white and wrinkled face in children points to chronic hydrocephalus, while with them a very sudden paleness, with severe limping, shows hip disease. Paleness in women indicates suppressed or profuse menstruation and chlorosis, or, in the pregnant state, threatened abortion or severe hæmorrhage. Sudden paleness about the nose in scarlet fever indicates metastasis to the brain, and during desquamation, it points to the approach

of dropsy. Very sudden paleness after a fall is a sign of concussion of the brain. Blueness of the face generally indicates diseases of the heart, as dilation of the ventricles and disease of the valves, but in children, it denotes cyanosis, which is apt to prove fatal. A grayish livid or lead-color of the face signifies scirrhus or gangrene. A yellowish color of the face, points to disease of the liver. It is deep yellow in jaundice; not so deep in bilious fever. Brown spots on the face of women indicate either pregnancy or irregular menstruation. If irregular brownish spots, a little raised above the adjoining skin, appear on children, they denote congenital syphilis. Small varices on the left side of the nose, lips, glans penis (in men), or labia (in women), indicate venous obstruction in the heart. Ring worms about the body or face, point to disease of the kidneys.

Erysipelas.—This disease has been described under the head of skin diseases, nevertheless, it may be well to refer to it here. Erysipelas of the face—like that of other parts of the body, consists in an hyperæmic state of the cutis, with profuse infiltration of the lymphatic, the cutis and the subcutaneous areolar tissue. It may assume a phlegmonous form of inflammation, as it does in erysipelas of the scalp.

TREATMENT.—The reader is referred to erysipelas of the scalp for general treatment. I usually control the fever with aconite, and alternate that with the chloride of iron, in doses of drop 5 to 10, every three hours, sometimes making a wash of the sulphate of iron (say gr. 10 of it to 3 1 of water), and applying lint, or a cloth, wet in this solution to the part. Occasionally I use a solution of veratum viride (tinct.) 5 1 to 3 1 of water, applied three or four times a day. If the fever runs very high (the skin being of a bright red color), and if the patient is inclined to be stupid, or delirious, and complains of headache—belladonna is demanded, in doses of gtt. 2 to 3, every three hours, I alternate it with gtt. 1 to 2 of rhus toxicodendron—which is apt to cut short the disease. If erysipelas assumes a malignant form, and the swelling becomes very great, with severe burning, and a tendency to gangrene, the tincture of arsenic is indicated in doses of gtt. 2 to 3 every three hours. The disease may be prevented from spreading by applying a saturated solution of nitrate of silver around the diseased patches, so as to make a distinct ring of the silver around the diseased part. It must be carefully done, or it will not succeed.

Milk Crust.—This affection is confined to nursing infants. It commences with a patch of pimples, slightly elevated above the level of the surrounding integument. These patches increase in size, becoming more and more inflamed from rubbing, and the cuticle is raised in circles, which are soon broken by friction. The

surface finally becomes raw, swollen, and pours out an ichorous, fetid exudate, which dries and forms crusts on the scalp, which are sometimes hard to detach. The irritation of milk crust gradually increases, and the patches of the disease spread, until it covers the entire scalp, or perhaps even attacks the ears, causing filthy ulcers upon, or behind the ears. Sometimes the secretion changes, first to a milky, then to a yellow, and finally to a purulent fluid. In this stage, small pustules are developed upon an inflamed surface, hence it has been called "impetigo," which it resembles very much in this stage. At this time, the crust becomes thicker, and resembles dried honey in appearance. Friction may cause blood to ooze out, which mingling with the discharge, tinges it of various colors from brown to black. The disease is not always confined to the head and face, but sometimes spreads to the body, proving a source of great annoyance and suffering to the child. It usually yields to proper treatment.

TREATMENT.—If the discharge is acrid, and the disease characterized by pimples and pustules, gtt. $\frac{1}{2}$ to 1 of the tincture of arsenic, should commence the treatment, given three times a day. If the child is restless and teething, and cannot sleep well, I find gtt. 1 to 2 of tinct. of belladonna useful, given twice a day until the child becomes quiet and composed. If the teeth come through the gums very slowly, the pure carb. of lime (the inside of the oyster shell) should be taken in doses of gr. 1 or 2 thrice daily. I have used this medicine with fine effect in tardy dentition. If there is great itching, sulphur will be the proper remedy, in doses of say gr. $\frac{1}{2}$ to 1 before meals.

Acne Punctata: Acne Rosacea.—This is simply a distention of the sebaceous follicle, the contents of which project above the surrounding skin and become black from the accumulation of dirt in the comedones. These comedones, when pressed out, resemble little warts. Acne punctata is simply an irritation set up around the hair follicles, which causes retention of the secretion and consequently, the inflammatory process. Acne rosacea is a mere chronic inflammation of the skin on the face or nose, made up of acne spots, inflammation around the glands, erythema, and a new growth of connective tissue, which is independent of the glands. Some persons are naturally predisposed to this disease, especially about puberty, and occasionally after that through life.

TREATMENT.—Belladonna, in doses of gtt. 2 to 3, three times a day, alternated with pulsatilla, gtt. 5, will often cure comedones and acute punctata, but acne rosacea is more difficult to cure. When there is a varicosed condition of the veins, hamamelis is a good remedy, in doses of gtt. 5, three times a day.

Lupus.—This disease commences with small red spots, not larger than a pin-head, which generally appear upon the cheeks

or nose. Sometimes the centres of these small points are marked by comedones of a greenish color, corresponding to the orifices of the hair follicles, which are much distended and patulous. They generally coalesce and form small patches, covered with adherent fatty scales. These patches gradually extend by their peripheries, and sometimes heal in the centre, where the skin looks white and rather depressed, as if made thinner than natural. It is a rarer disease than epithelioma, and generally becomes chronic. It seldom occurs before the twentieth or thirtieth year. It seems to attack females, and especially those who are subject to disorders of the sebaceous glands. It is mostly confined to the face and nose. In lupus erythematosus, the sebaceous glands are always disordered, but not so in lupus vulgaris. This latter condition appears in childhood or in youth, but lupus erythematosus always in adults. Lupus is what is called skin-cancer, but it is not a cancer.

TREATMENT.—One of the most effective remedies that I have tried is the chloride of gold and sodium in doses of gr. 1–40 to 1–50, taken three times a day, at the same time a solution of gr. 5 or 10 of it to 3 1 of rain water, may be applied to the ulcer. Sometimes powdered black lead may be applied to the ulcer with marked effect. Internally, the tinct. of arsenic is a good remedy, and may be used, if the gold fails to do good in a few months. As a local application, the oil of cade acts favorably in some cases, mixed with equal parts of alcohol and *sapo virid.* The tincture of iodine and iodide of potassium may be administered thrice daily in doses of gtt. 3 to 5, in the form of Lugol's solution, or of the tinct. of iodine. *Cistus canadensis* also, in alternation, has a good effect in doses of gtt. 30 of a saturated tincture. Lupus vulgaris, is a tubercular scrofulide, and comes on in large or small, yellow or red elevations, which soon ulcerate. These tubercles are covered with a layer of adherent epidermis. This form is very obstinate, and always chronic. It is also called skin cancer by cancer doctors. It occurs about the age of puberty, mostly in scrofulous subjects, and attacks the face or extremities. The fibrous tissues, cartilages, and mucous membranes are its principal seats. It may be mistaken for syphilis, although in the latter disease the tubercles are rapidly developed and hard, while those of lupus are soft and develop very slowly. Again the ulcers in syphilis have sharply defined borders, and discharge a copious offensive secretion, while those of lupus are poorly defined, and have but a slight and inoffensive discharge. The scabs of syphilitic ulcers are thick and of a greenish color, but those of lupus are scanty and of a brownish-red color. After healing, syphilitic cicatrices are soft and white in color, but those of lupus are yellow and shrunken. It may be distinguished from epithelioma by

the hard, everted edges of the ulcers of epithelioma. It must moreover be remembered that lupus is a disease of childhood and youth, while epithelioma is confined to adult life.

TREATMENT.—In the first stage the biniodide of mercury ointment, gr. 5, or simple cerate, gr. 25 or 50, may be applied to the ulcer once or twice a day, with good effect. If the papules or tubercles are firm and not ulcerated, they may be removed with the paste of arsenious acid, as described in the treatment of epithelioma. An ointment of pyrogallie acid is sometimes very good, say ten per cent. of the acid to ninety per cent. of simple cerate. One of the best constitutional remedies is arsenic, in doses of gtt. 3, three times a day. The sulphide of calcium is a good remedy where there is severe suppuration, in doses of gr 2 to 3, every three hours. *Cistus canadensis* is also valuable, and may be ordered in doses of gtt. 30 to 60 three times a day, in the form of a saturated tincture. If the ulcers are irritable, an ointment of graphites (black lead) is a good application for them. *Hydrastis*, locally, in the form of a glycerite, is a good remedy, and given internally, at the same time, has acted well with me in several cases. I also wash the ulcer in a solution of sulph. of zinc; gr. 10 to $\frac{3}{4}$ 1, of water.

CHAPTER XXVII.

DISEASES OF THE MOUTH AND THROAT.

The Tongue.—Much stress is placed upon the color, moisture, dryness, and peculiar coatings of the tongue. A deep red tongue with raised papillæ (called strawberry tongue) prevails in scarlet fever. Red and dry tongue occurs in inflammation of the brain and its membranes; and generally in inflammations of the thoracic viscera and mucous membrane of the stomach and intestines. If red on the edges and tip, with a dry streak in the middle, it indicates either inflammation of the stomach and bowels, or typhoid fever. If red, clean and glossy, it not only shows a grave form of fever, but also an approaching brain complication, and impending delirium. Should these symptoms occur in the course of gastric fever, it denotes a transition into typhoid fever. A deep red or dark, cracked tongue indicates ulceration of the bowels, and a red, moist, smooth, glossy one, points to chronic gastritis. An unusually pale tongue is found in chills, spasms, after great loss of blood, in chlorosis, anæmia, dropsy, and in general exhaustion of the vital functions. If this pale tongue appears in the course of an attack of gastric, bilious, or exanthematic fever, it denotes a fatal termination, fast approaching. A lead-colored tongue prevails in cholera, mortification of the lungs or stomach, and in scirrhus of the tongue itself. If it takes place in connection with thrush or stomatitis, it is a sign of approaching dissolution. A bluish tongue shows an impeded circulation of the blood, and hence is often observed in asthma, whooping cough, croup, bronchitis, pneumonia, valvular disease of the heart, dropsy of the chest, cyanosis, scurvy and salivation. A moist tongue is generally to be regarded as a favorable diagnostic sign in health and disease. In the former, it indicates a healthy condition of the digestive organs, and in the latter, a better condition of the stomach and bowels than a dry state of the tongue shows. There are exceptions, perhaps, to this general rule. In putrid fevers, attended with a profuse perspiration, this colored tongue is unfavorable. A dry tongue prevails in a great many affections, especially in such febrile diseases as tend to affect the stomach, bowels, and brain. If the tongue, in typhus and typhoid fevers, is dry, dark, coated or cracked, it makes the prognosis unfavorable.

The tongue is coated in persons who use tobacco, and in the morning with an empty stomach, especially with those who do not sleep well at night. A slight coating at the root of the tongue

is not of serious import, Coating of the tip of the tongue is found in bad cases of phthisis pulmonalis, and in extreme cases of bronchitis. Coating of one side of the tongue may be seen in disease of the liver or spleen, or in affections of one side of the lungs. A tongue coated in patches indicates dyspepsia of a mucous character, that is, catarrhal dyspepsia. A thick, white coating is seen in cases of tonsilitis, and often in irritation of the stomach and intestines. Tonsilitis generally has a very heavily-coated tongue. A light yellow, or dirty white coating indicates a septic condition, and a deep yellow coating shows disordered functional action of the liver. A buff-colored coating occurs in cases of enteritis, and sometimes in chronic or acute hepatitis. A dark brown coating in fevers points to great gravity of type. A very dark or black coating in dysentery indicates very great exhaustion, mortification and approaching death. In jaundice, a dark, heavy coating upon the tongue denotes organic diseases of the liver or spleen, such as abscesses, tubercles, induration, etc. Children with hydrocephalus, and "cretins," have a long, large tongue. A very small tongue, if not inherited or associated with paralysis of the organ, indicates consumption. A sudden diminution in the size of the tongue, in cases of pneumonia, hepatitis, or putrid and typhoid fevers, or in the formation of abscesses, indicates great exhaustion of the vital forces. A gradual decrease in the size of the tongue in acute affections, denotes great severity of disease.

A broad tongue occurs in scrofula, rachitis, and sometimes in intermittent fever. A pointed and narrow tongue shows a tendency to tuberculosis, or internal inflammations. A heavy, large tongue, in old age, indicates a tendency to apoplexy, especially in drunkards. A heavy, large tongue (in fevers), if dry and associated with stammering, denotes congestion of the brain. Hard, brownish-red tumors on the tongue, with blue blood vessels interspersed through them, indicate approaching cancer of the tongue. Lumps and fleshy excrescences upon the tongue are indicative of elephantiasis. A hard, dry tongue may occur with congestion and inflammation, or in fevers, tonic spasms, scirrhus of the organ or in other degenerations of its substance. A soft tongue exists in paralysis of the tongue, or it may be associated with catarrh, chronic mucous diarrhœa, and derangements of the digestive organs.

Glossitis.—Inflammation of the tongue may be confined to a portion of the organ, or it may pervade its entire parenchyma. A superficial inflammation of the mucous membrane of the tongue may exist with inflammation of the mucous tissue of the mouth, but this is not so grave a form of disease as glossitis.

SYMPTOMS.—Rapid swelling of the tongue is one of the most noted symptoms of glossitis. I have seen cases of salivation, in

which death took place from suffocation, the enormous tongue filling up the space in the palatine arch, and pressing on the epiglottis, and so preventing breathing. A young lady in Walton Co., Ga., who was salivated for an attack of pneumonia, was seized with the most violent form of glossitis, under which she sank, by suffocation, in a few hours. The disease proves fatal, in some instances, where it occurs from other causes. In severe cases of glossitis, the adjacent lymphatic glands become involved, and so do the salivary glands. The pain is severe, and extends to the throat and ears. It runs a very rapid course, either terminating in a few days in convalescence, or in suffocation, as before stated; or perhaps it terminates in an abscess, which most generally breaks through the surface of the organ, and discharges into the mouth. Gangrenous destruction of large portions of the tongue has occurred in some cases of mercurial glossitis, which have been followed by lasting indurations, having a great tendency to renewed attacks from time to time. This is one of the strong objections to salivation, a method of treatment which sober investigation is fast laying aside (with other dangerous and useless forms of medical treatment), for safer, more effectual and more rational remedies. Partial glossitis may commence with a small, hard tumor, about the size of a pea, on the back part of the tongue, which may increase and finally suppurate, breaking and discharging pus, without any very serious interference with the general health. The most serious form of this disease seems to be that caused by anthrax poison in the blood.

TREATMENT.—In cases of inflammation of the tongue attended with severe stinging and burning pain with blisters on the tongue, I give tincture of *apis mel.*, in doses of *gtt.* 1 to 2 every two hours, to relieve the inflammation in a short time. In cases where there is a tendency to gangrene, there is nothing that will meet this pathological indication so well as arsenic. *Gtt.* 1 to 2 of this medicine, every three or four hours, will soon correct the condition. If the disease be the result of salivation, the sulphide of calcium acts well, in doses of *gr.* $\frac{1}{2}$ to 1, three times a day, or if this fail, sulphur may be used with much benefit. I prefer the saturated tincture of pure alcohol, giving doses of *gtt.* 3 to 5. The blood will readily take up and appropriate the tincture, but will not do so with the powdered sulphur itself. Some cases following salivation are benefited by small doses, of say *gtt.* 1 to 2 of nitric acid, well diluted with simple water, three times a day. Aconite is of no special service, unless the fever runs very high, when it may do good.

Cancer of the Tongue.—Cancer of the tongue is usually of the epithelial variety, and is mostly found to commence at the lip, and at the edge of the tongue. It first appears as a small,

hard lump, which finally forms a round ulcer, with distinctly raised edges and an uneven bottom. It may be distinguished from any ordinary form of ulcer by its very great tendency to rapid encroachment upon the surrounding parts, by its indurated and lardaceous bottom, by the milky, viscid substance which, upon pressure, exudes upon its edges, and by the burning, boring, lancinating pains attending it. After the cancer has progressed considerably, the adjacent tissues begin to swell, and the ulcer rapidly spreads, either upon the superior or inferior surface of the organ. As the disease advances deglutition becomes more and more difficult, and all motion of the tongue is quite painful. The salivary glands are much excited, and saliva is secreted in great abundance. This disease is very apt to affect the lymphatic and other glands about the neck, and especially those about the throat and tongue. The tongue itself is apt to become firmly attached to the bottom or floor of the mouth, so that its mobility is much impeded, and sometimes almost entirely destroyed. It gradually shortens, grows hard and lumpy, and finally becomes ulcerated and emits an intolerable odor. It is not unusual for the glands of the neck to become so enlarged that the patient cannot open his mouth, and so he gradually sinks from starvation and intense mental and physical suffering, or he may live for three or four years in this condition.

TREATMENT.—The tincture of arsenic is our chief internal remedy, and should be given in small doses, say gtt. 1 to 2, and continued for some two or three months. The ulcer, when formed, should be dressed thrice daily with powdered hydrastis. After the arsenic has been tried a few weeks, the tincture of hydrastis may be used awhile, or the extract of *sempervivum tectorum* (house-leek) locally applied.

Inflammation of the Gums.—Swelling of the gums is either congestive or inflammatory. It may result from affected or decayed teeth. The swelling may be œdematous and spongy in character, as in scurvy, mercurial affections, or sometimes in stomatitis. In such conditions the gums bleed easily. Ulceration of the gums occurs often from a diseased state of the teeth, scurvy, syphilis, mercurial poisoning, noma and stomatitis. Gum boils generally originate from diseased teeth. Inflammatory swelling may reach such a height as to swell up the cheeks and side of the face, ending finally, perhaps, in an abscess, which, if not opened, will break and discharge pus.

TREATMENT.—For bleeding of the gums, if from scurvy, I use acids, or, if from inflammation, I find some astringent wash, as an infusion of hamamelis, has good effects. When inflammation takes place, the face may be bathed in the following liniment, arnica tincture $\bar{\text{3}}$ 1, aconite gtt. 10, chloroform $\bar{\text{3}}$ 1, tincture of

camphor $\bar{3}$ 1, olive oil $\bar{3}$ 2; bathe parts every two hours, and if suppuration takes place, give sulphide of calcium, in doses of gr. 1, three times a day.

Dentition.—The order of dentition is about the following: the two lower incisors come between the fourth and seventh month. Then in three or four weeks the four upper incisors cut through, and are followed somewhere between the eighth and tenth month by the two molars of the upper jaw. The lower incisors appear, and then very soon the molars of the lower jaw also. Between the eighteenth and twenty-fourth month, the canine teeth make their appearance, followed some two months afterwards by the four second molars. There are, of course, exceptions to this general rule. The period of dentition is attended with great danger to the child from increased secretion of saliva and ulcers of the lips, gums and sometimes of the palate. The child is subject to diarrhœa, and catarrhal affections of the chest, and some are troubled with cutaneous affections, such as urticaria, thrush, lichen, prurigo, eczema, crusta lactea and impetigo; or with disorders of the brain and nervous system, as spasms and eclampsia, and also with frequent attacks of fevers and various inflammations. These must all be watched with great care.

Decay of the Teeth.—Decay of the teeth is caused by the free use of mercury, acids and hot fluids. It is also ascribed to microscopic parasites, and to a want of silicea in the general system.

TREATMENT.—The use of triturated silicea, alternated with carbonate of lime, will aid in arresting the decay, if not caused by acids and mercurials.

Odontalgia.—If from decayed teeth, only temporary relief can be afforded, until the teeth are filled by a good dentist. There are a great many remedies for toothache. I have often relieved it with chloroform, the oil of peppermint, oil of cloves, cajuput, or tincture of aconite. The front teeth may often be relieved by putting a drop or two of belladonna on a bit of cotton into the hollow of the tooth. The eye teeth may be relieved with aconite applied on a bit of cotton or lint, and the molars or back teeth, by arnica or belladonna applied on cotton. Sometimes where the pulp of the tooth is exposed and sensitive, the application of carbolic acid on cotton, for a few hours, will relieve the sensitiveness and pain. Creosote is also often successful when thus applied.

Parotitis.—This is an epidemic and contagious affection of the parotid glands, to which children are most subject. It rarely affects both glands twice, but I have known it to attack one at one time, and in another epidemic visitation to affect the other gland on the opposite side.

SYMPTOMS.—This affection is frequently preceded by more or less pain in the limbs, headache, loss of appetite, chilliness alternated with feverishness, and occasionally, nausea and diarrhoea. Its incubation stage is usually from six to eight days. The pain is felt in the region of the parotid gland, and is much intensified by opening the mouth. The gland becomes more and more enlarged, until the face is very much distorted. The swelling is not circumscribed, and is of a doughy feeling, being the result of enlargement of the gland, together with an œdematous infiltration of the adjacent connective tissue. The swelling may extend to the tonsils and pharynx, or to the larynx, but it is mostly confined to the parotid glands. The skin over the enlarged gland may be pale, waxy, and shining, or it may be of a reddened or purplish color. Movement of the jaw is very painful, and there may be partial deafness. There may also be loss of appetite, nausea or vomiting, and sometimes constipation. The swelling is so intense in some cases, as to develop into cerebral hyperæmia. As a general rule, only one gland is attacked at a time, but generally the disease soon attacks the other side, which makes the complaint more protracted in duration. The temperature is not very greatly elevated, nor is the circulation much increased. By the fifth day, the fever usually subsides, and convalescence is established, so that the attack, if not complicated, will terminate in from twelve to fourteen days. In some cases the inflammatory process locates itself also upon one testicle, generally the right, or it may attack both at the same time. This takes place generally after the inflammation has subsided in the parotid gland. Epididymitis may be combined with an acute hydrocele and œdema of the subcutaneous connective tissue of the scrotum; and there may be painful urination and mucous discharge from the urethra, like that of gonorrhœa. In females, a metastatic swelling of the mammae, external genitals, ovaries, or inguinal glands sometimes takes place, or perhaps, the conjunctiva and mucous membrane of the throat, urethra and vulva, may become inflamed. In some rare cases, gangrenous destruction of the glands has been observed; but this is owing to some very bad state of the blood.

TREATMENT.—When the swelling presents a bright red color and there are brain symptoms, belladonna will do good service, in doses of gtt. 2 to 3, every four hours. Where there is restlessness and fever, and when the swollen glands are of a dark red color, *rhus toxicodendron* is indicated, in doses of gtt. 1 to 2, every three hours. If this fails, *euphrasia offic.* in doses of gtt. 10 to 15, should be ordered every hour until the patient is much better. If metastasis to the testis takes place, *pulsatilla* will give quick relief, in doses of gtt. 4 to 5 every three hours, or a bath of mullein tea applied to the testes. This last has never failed me.

Symptomatic Parotitis.—Symptomatic parotitis is sometimes associated with typhus and typhoid fever. It may occur with scarlet fever, measles, small-pox, pyæmia, puerperal fever, and sometimes with cholera and dysentery.

SYMPTOMS AND DIAGNOSIS.—The swelling in metastatic parotitis is much harder, and more prone to suppuration than in mumps, in fact it is rare that this form terminates any other way than in suppuration. I have had to contend with it in several cases of typhus and typhoid fever, some of which proved fatal, in spite of all treatment. Where the patient's blood is in a bad condition, gangrene sometimes results. In some cases that I have met with in typhoid fever, after free discharge from the gland, other parts would suppurate, and large fistulous openings would result, or occasionally the abscesses would be transformed into ichorous cavities, and finally end in gangrene and death. If it occurs in the early part of the course of typhus or typhoid fever, it is very apt to prove fatal, but if it does not appear until convalescence is established, the patient, if properly treated stands a good chance of recovery, otherwise death may result.

TREATMENT.—When the glands first begin to enlarge, if induration is very distinct, the muriate of barium may be ordered with good effect, or the iodide of barium may be taken every three hours in very small doses, say gr. 1 to 2 of the 1st. dec. trituration. Ointment may be applied over the gland, three times a day. After suppuration is established the sulphide of calcium is one of our chief remedies, given in doses of gtt. 1 to 2 ter die. This may be alternated with the 1st dec. trit. of silicea, in doses of gr. 1 to 2. When gangrene is approaching, the tincture of arsenic is one of our most trustworthy medicines. and may be given in doses of gtt. 2 to 3, three times a day. After the abscess is opened, the cavity may be dressed with glycerine and creosote in equal parts, or with Listerine, or boracic acid. I use the saturated solution of boracic acid locally with fine effect in many cases of suppuration, and give sulphide of calcium internally. My opinion is that the oil or tincture of eucalyptus glob. is a valuable local application after the abscess is opened.

Tonsilitis.—There is a simple form of catarrhal inflammation of the mucous membrane of the tonsils, which is a part of simple pharyngeal catarrh. There is also a follicular form of catarrh of the tonsils which is deeper seated and is soon followed by a thin, yellow, or white curdy substance, which adheres to the parts. This consists of pus and epithelium mingled together.

DIAGNOSIS.—Tonsilitis may be mistaken for diphtheritis, herpetic angina, or even for superficial abscesses of the tonsils. In superficial abscesses, however, there is more or less inflammation in the palatine arch. This condition terminates in spontaneous

discharge of the purulent contents or the contents gradually dessicate, in which case they become foul or calcareous. Sometimes the patient hawks up small cheesy lumps of this kind. This form may give rise to extersion, or to a parenchymatous amygdalitis, which is known by congestive hyperæmia and serous infiltration, from which the tonsil or tonsils become enormously enlarged. Sometimes only one tonsil is affected at first, and then in a few days the other is attacked. Either of the above forms of tonsilitis, except the superficial one, may give rise to considerable pain, swelling and great difficulty in swallowing. They may also be associated with œdema of the pharynx, or the inflammation may extend to the eustachian tubes, causing pain in the ears. Again, it may extend to the larynx, causing dyspnœa or paroxysms of suffocation, which alarm the patient and his friends. All severe cases are attended with a high fever, especially those that suppurate. The temperature may rise to 104° Fahr., and headache, delirium, or even convulsions may result in severe cases. Some persons are subject to frequent attacks of tonsilitis, and others have it in a chronic form, with great enlargement, which very greatly impedes respiration, especially while sleeping. I think those who suffer from the chronic form are such as have a hereditary taint in their system. I have noticed that it runs in families—in the grandchildren, as well as the children.

TREATMENT.—At the commencement of an attack of tonsilitis, the muriate of ammonium, in doses of gr. 5, three times a day, may be alternated with gtt. 1, of aconite. The latter may be ordered every two hours until the tonsils begin to diminish in size, and then three times a day. If the tonsils are red, and œdematous, and if there is a burning pain, and dryness of the mouth, the tincture of apis mel., in doses of gtt. 1 to 3, will be apt to relieve these symptoms. Where patients have attacks of tonsilitis every time they take cold, the carb. of barium has a curative effect, in doses of gr. 1 of the 1st dec. trituration, three times a day. Especially is this the case in soft enlargement of the tonsils. Iodide of barium, in doses of gr. 1-10 or 1-15, thrice daily, has made some brilliant cures in cases of old chronic hypertrophy, where there is induration or a tendency thereto. Sometimes where there are cerebral symptoms, belladonna has a good effect in doses of gtt. 2 to 3, three times a day; it should never be forgotten. I have also cured many cases of chronic tonsilitis with iod. pot.

Uvulitis.—In common language, this is called “falling of the palate,” and consists of more or less enlargement of the uvula. It is of great annoyance to the patient, as it keeps him or her constantly trying to swallow, and also produces a hacking cough, and a very unpleasant sensation in the palatine arch. I used to

excise the elongated uvula, especially if connected with phthisis pulmonalis or bronchitis. This was the usual custom of physicians where I then lived.

TREATMENT.—Aconite has a special affinity for the uvula as well as for the tonsils, and hence may be given in doses of gtt. $\frac{1}{2}$ to 1 every two or three hours, alternated with gtt. 1 or 2 of belladonna. If the inflammation runs high, and the elongation is very great, gelseminum, in doses of gtt. 5, every three hours, will be preferable to the belladonna. If there is a complication of tonsillitis with it, the iodide of potassium may be given in doses of gr. 2 to 3, three times a day. Astringent washes are only temporary in their effect. Monsel's solution, diluted, is the best one.

Sore Throat.—Catarrhal sore throat generally involves the mucous covering of the soft palate, tonsils, and fauces. The throat, looks dry, red and somewhat swollen, and after the disease advances, there is a tough phlegm upon the tonsils, giving the appearance of diphtheritis. Sore throat is often mistaken for that disease. In the acute form of catarrhal sore throat, there is considerable fever, painful deglutition, a heavily coated tongue, increased saliva, and a very bad taste in the mouth. If the pharyngeal muscles are involved, deglutition may be entirely prevented. The voice assumes a nasal tone. The inflammation may extend up into the naso-pharyngeal cavity affecting the eustachian tubes, and causing more or less deafness in the patient, and a sharp pain in both ears, or on one side only, according to the extent of the inflammation of the naso-pharyngeal cavity. Some patients are very subject to repeated attacks of this affection.

CAUSES.—It is mostly excited by atmospheric influences, and a constitutional tendency to the disease in the patient. I have seen it prevail as an epidemic. There is a symptomatic form that occurs with scarlet fever, small-pox and measles, which is often of a very grave character.

TREATMENT.—Where the throat is dry, with a drawing, stinging pain, and where there is general fever, aconite is the remedy to commence with, and may be given in doses of gtt. $\frac{1}{2}$, every half hour. I also use gtt. 2, with \mathfrak{z} $\frac{1}{2}$ of water, throwing it upon the the throat with the spray apparatus. Not more than this should be used at a time, nor should it be done more than three times a day. It is much better than old astringent gargles of alum, etc. If the tonsils are involved, and there is a burning, stinging pain, or œdema of the tonsils and palatine surface, gtt. 1 to 2 of tinct. of apis. mel. should be administered in alternation with the aconite. If the throat presents a scarlet redness, belladonna acts very well, in doses of gtt. 2 to 3, given three or four times in the day. If the throat be dry, sore, red and inflamed, I order gtt. 2 to 5, of tinct. of sanguinaria, repeating it occasionally.

Chronic Sore Throat.—In this form of angina, there are small elevations (like peas split open) which may stand singly, or be scattered over the pharyngeal wall of the fauces. The mucous membrane may be dry and smooth, or it may be covered with a tough mucus of various colors. In some cases there will be kind of bloody crusts, which are hard to detach. If the disease extends up into the naso-pharyngeal cavity, and is connected with chronic nasal catarrh, or if it should spread down into the larynx, there will be great laryngeal irritation, and a harrassing cough, which is often mistaken for chronic bronchitis, and occasionally for phthisis. The fauces presents a red appearance, and the veins are enlarged and radiate in various directions. There may be only slight pain, but there is generally a raw feeling in the throat, and a sense of scraping when the patient attempts to swallow. He is much annoyed all the time by a constant sense of dryness of the throat, and by a tough phlegm accumulating and exciting hawking, etc. This phlegm causes the patient to make violent efforts to cough it up, and in some cases small blood vessels are ruptured, causing more or less hæmorrhage, which alarms the patient very much. It is a very unyielding disease. It frequently attacks public speakers, as clergymen for instance, and hence has received the name of "minister's sore throat." It is also confounded with another affection of public speakers, which consists in hoarseness from loud and forced speaking, which strains the muscles of the soft palate or vocal cords so much as to cause great hoarseness, and sometimes aphonia. Excitable speakers are very liable to this latter affection.

TREATMENT.—*Arum triphilium* is one of our most trustworthy remedies, especially in cases presenting the following symptoms: profuse secretion of phlegm, and hoarseness, which is aggravated by talking. I add gtt. 10 to $\frac{3}{4}$ of water, and give gtt. 60 of the mixture, three or four times a day. Very small doses of alum have done well in many cases. Bichromate of potassium is a good remedy where the phlegm is very strong and tough; dose gr. $\frac{1}{2}$.

Retro-Pharyngeal Abscess.—This affection consists in an acute suppuration of the connective tissue between the posterior wall of the fauces and the vertebræ, or it occurs in consequence of disease of the cervical vertebræ, such as caries and fracture of the atlas and axis. It usually runs a rapid course, and soon develops symptoms resembling those of phlegmonous sore throat, such as fever, dyspnœa, difficult deglutition, pain in the head, stiffness of the neck (and in young children), spasms and convulsive paroxysms. If the abscess be left to nature, it soon spontaneously opens and discharges the pus into the lower pharynx, or fistulous openings from towards the thorax, or towards the integument of the neck.

If it discharges into the pharynx or larynx, especially during sleep, it is liable to produce suffocation.

DIAGNOSIS.—By palpitation, and location upon the posterior walls of the fauces, we distinguish this disease from amygdalitis. The symptoms of vertebral affections also readily distinguish it from other diseases.

TREATMENT.—If the patient can be seen in the stage of incubation, or any time before suppuration takes place, aconite, in doses of gtt. $\frac{1}{2}$, every hour, will do good service. If suppuration is approaching, belladonna should alternate the aconite, in doses of gtt. 2 to 4, every three hours. If there is much pain, I give bryonia, in doses of gtt. 1 to 2, every three hours. If the vertebræ are affected, the sulphate of calcium, in doses of gr. 2 to 4, three or four times a day, will be certain to restrain the excess of suppuration. This may be alternated with silicea, in doses of the first dec. trituration, say gr. 1 to 2, *ter die*. If the nasal ducts are seriously involved, the chloride of gold and sodium, in doses of gr. 1–50, thrice daily, will give good results. The chloride of gold will protect the nasal bones better than any remedy we have yet discovered. Phosphorus is also an effective medicine. Nitric acid, in doses of gtt. 1 or 2, may alternate the phosphorous tinct., *ter die*. The patient should have good nourishment.

Angina Ludovici.—This is inflammation and suppuration of the cellular tissue beneath the chin, in the vicinity of the submaxillary glands. It was first discovered by Ludwig, and was named after him. It sometimes prevails epidemically. The inflammation most commonly commences on the side of the hyoid bone, just over the bone. There is very great infiltration, with disposition to undergo purulent degeneration.

PATHOLOGY.—Post-mortem examinations have shown the connective tissue and muscles of the diseased region to be transformed into a semi-fluid of a brown color, mixed with small shreds of necrosed connective tissue. In some cases the parotid and submaxillary glands are destroyed by gangrene, and in others the adjacent parts are densely infiltrated up to the larynx and pharynx. Not infrequently, the periosteum of the submaxillary bone is loosened. Sometimes there is very great swelling of the hyoid regions. In some cases we observe with this hyoid swelling typhoid symptoms, which increase very rapidly, the swelling growing harder and larger, until it extends down to the sternum. The skin over the jaw soon becomes so tight that movement of it is quite difficult; hence, deglutition is very difficult, or even utterly impossible. Respiration is much interfered with, and the circulation is also impeded. Speech is also laborious or impossible. Vertigo, headache, and sometimes delirium, result from obstruction of the venous circulation in the head. Absorption may progress slowly,

and suppuration not take place. In most cases, however, pus is formed, and sometimes destructive gangrene takes place, from which also septicæmia and embolism may result, and be followed by a fatal termination. In more favorable cases, ulcerations may be finally followed by hard, contracted cicatrices, which may produce torticollis, and so greatly interfere with proper movements of the neck. Caries and necrosis of the jaw-bone may also result. Its causes are as yet rather obscure.

TREATMENT.—In the stage of incubation, aconite, in doses of gtt. 1, every hour, is the most positive remedy. Iodine may be used locally, at the same time, in the form of an ointment. Later on in the disease, iodine may be ordered internally, and the iodide of barium in the form of a ten per cent. ointment may be applied over the swelling. In this stage, the tincture of nux vomica, in doses of gtt. 5, may be given with good effect. It improves the entire vegetative functions.

The Mucous Membrane of the Mouth.—The mucous membrane of the mouth not only covers the inside of the cheeks, but also the fauces and nose, extending downwards into the œsophagus, stomach, intestines, and (by way of the larynx and trachea) into the ramifications of the bronchial tubes. It is subject to many diseases which are peculiar to itself. The mucous membrane of the stomach, bowels and air tubes have already been spoken of, and need not be noticed here again.

Thrush.—This disease seems to be the direct result of a microscopical fungus—the *oidium albicans*. This parasitic fungus invades the epithelium, forming thick white membranes, which often spread over a large portion of the mouth. At first there is only dryness, redness and heat in the mouth, which gives an acid reaction to litmus paper. After the lapse of a few hours, small white patches or points appear on the inner surface of the cheeks, which rapidly spread over various other parts of the mucous tissue of the mouth; in some cases, covering the whole buccal cavity, and sometimes spreading to the pharynx and œsophagus. This white membrane finally changes to a dirty white or yellow color, or occasionally it assumes a brownish color, especially if so roughly handled as to provoke slight hæmorrhage. At first, this false membrane adheres firmly to the mucous tissue, but about the third or fourth day, it loosens and can be detached. It has been found upon the rectum, female genitals and abraded skin. Very soon the child's mouth becomes so very sensitive that it nurses with difficulty, or not at all. In children artificially fed, it is not uncommon for improper feeding to produce intestinal catarrh, which adds very much to the severity of the affection, and even renders it fatal where due care is not taken in regard to the child's food and treatment.

CAUSES.—The acid state of the stomach, which generally prevails in artificially fed children, leads to the formation of this fungus. Over-nursing children is also liable to give rise to the same condition. The saliva when healthy is of an alkaline reaction, more so after meals, and less so when the stomach is empty. The buccal mucus has an acid reaction, increased by contact with the atmosphere, which causes at once acid fermentation of the mouth. In young infants the secretion of mucus is in excess of saliva, hence arises the very great tendency in young children to this acid fermentation, and consequently the developement of the fungus growth which causes thrush. In artificially nourished infants, that are improperly fed with such articles as easily undergo acid fermentation, this disease is very common. It is noteworthy, that thrush attacks artificially nourished children more frequently than those that are nourished at the breast of healthy mothers. It is also a fact, that nursing children have a free flow of saliva while drawing at the nipple, while the infant artificially fed, does not have so free a flow, and hence is more subject to acid fermentation, and thrush therefrom.

TREATMENT.—If there is heat and dryness of the mouth, borax is the remedy; 1 part of it may be triturated with 9 parts of sugar of milk, and a few grains put upon the tongue of the child, suffered to melt and come in contact with the mucous surface, and then swallowed. Internally, baptisia may be given in doses of gtt. 1 to 2, every three hours, or the triturated sulphur, 1st dec. trituration, in doses of gr. 1, every three hours. In severe cases the sulphide of calcium may be ordered in doses of gr. 1, thrice daily. This is a specific.

Ulcerative Stomatitis.—This disease may be divided into several varieties. Aphthæ, or canker of the mouth, may result from catarrhal inflammation, which produces erosions or ulcers, or from follicular inflammation, which gives rise to deeper ulceration. Again, it may occur in connection with labial herpes or hydroa. Aphthæ occur mostly in children, but the follicular form of stomatitis is found in women while menstruating, during pregnancy, and often in lactation. Aphthous ulcers are of rapid formation, frequently forming in a few hours. They generally appear on the mucous membrane of the lips and cheeks, but sometimes on the gums and soft palate, and occasionally on the tongue. The bottom of these ulcers presents a white appearance, or in some cases they are of a yellow color. Their edges are red, somewhat raised, round, and about the size of a split pea. The follicular ulcers are small, round, and deeply excavated. All these forms of stomatitis cause great tenderness of the surface of the mouth. The secretion of mucus and saliva is very much increased, and in putrid sore mouth, a very offensive odor of the breath is exhaled from the patient's

mouth. This form of stomatitis, which is a very destructive ulceration of the border of the gums, produces a swelling of the mouth and a characteristic cadaveric odor. It mainly attacks children after their first dentition has been completed, and is often found among those who are of filthy habits, and among inmates of hospitals, but seldom among those who are cleanly. It seldom occurs among adults, except as an epidemic among soldiers in camps who are not cleanly. Its production, like that of many kindred diseases, is very much favored by filth. It frequently appears in adults in a sporadic form, as the result of the abuse of mercury; or it may possibly arise from an enfeebled condition of the patient, or from poor food and uncleanness. It makes its appearance at the margin of the gums of the lower jaw, and extends backwards to the lips, cheeks, and tongue. There is generally great fœtor of the breath, and a profuse, acrid, secretion constantly flowing from the mouth. It is not uncommon for the gums to bleed, especially when pressed, and the tongue is usually coated and swollen. The lymphatic glands of the neck and throat are also often enlarged. It is not generally attended with any great degree of fever. If stomatitis be neglected, especially in the follicular form, it produces very destructive ulceration of the lips, gum, and tongue, sometimes destroying the gums, large portions of the tongue, and occasionally the cheeks. If not arrested, it proves fatal.

TREATMENT.—In the treatment of the simpler form of aphthæ, where there is only superficial ulceration, the local use of borate of sodium or chlorate of potassium, and the internal use of arum triphillum is sufficient. In graver forms, where there is deep-seated ulcerations, baptisic, internally, and the application of sulphate of copper, will be required, say sulph. of copper gr. 10, gum arabic ʒ 2, cinchona bark, pulv. ʒ 1, water ʒ 1, applied three times a day. An occasional wash of hydrastis is also beneficial.

Diphtheria.—This is a contagious disease, doubtless of miasmatic origin. Klebs, a German investigator, and others also, ascribe this disease to the action of parasitic fungi or bacteria—the *micrococcus diphtheriticus*. Though most frequently seen to attack the throat, it is not confined to it, but may appear on different parts of the body. It has been observed upon contused and incised wounds, but mostly attacks the throat, at times spreading to the upper pharyngeal and nasal cavities, and finally into the eustachian tubes, larynx and lachrymal ducts. This condition is attended by a characteristic fibrinous exudation, in the form of round, white or dull-yellow patches, of various sizes, at first sticking closely to the mucous membrane, from which it can only be forcibly detached. These patches spread until they cover the tonsils, uvula, palatine arch and pharyngeal cavity with a sheet of false membrane, which

in the course of a few days becomes gray-brown and less adherent. It consists of a fibrinous exudate, the interspaces of which contain serum, or, in the latter stages, blood or pus corpuscles.

It frequently happens that globular bodies are seen (which consist of finely-punctured masses of fungus) in layers upon the surface of this croup-like membrane. In the advanced stages it appears in spots between the uppermost layer of epithelium, and the croupous reticulum. The micrococci penetrate to the sub-epithelial tissue. This false membrane finally becomes loosened by means of infiltration with serum or pus corpuscles, and continued growth of new epithelium. The mucous membrane is in a state of hyperæmia, or sometimes is dotted with numerous hæmorrhages, and may also be infiltrated with serum, or sero-pus. In grave forms of the disease, there is a highly septic condition of the parts, and the mucous membrane undergoes a rapid necrosis, or putrefactive decomposition, large quantities of different varieties of bacteria appearing with the micrococci, mingled with the exudate.

In some cases, an extension of this disease to the nose takes place, characterized by a thin, purulent, greenish discharge, which is so acrid that it excoriates the parts which it touches. The great danger in this disease lies in its liability to suffocate the patient, by spreading upon the mucous membrane of the larynx, trachea, and bronchi. When it thus attacks these parts, it much resembles croup, and is often mistaken for it. I was called, not long since, to a lady who had this form of the disease. Two old physicians had entirely mistaken her condition, until she was totally beyond the reach of the ordinary remedies. The pharyngeal complication may commence early in the disease, or it may not take place under three or four days. It occurs oftener in children than in adults, and usually in grave cases. It may be recognized by prolonged respirations, a frequent dry cough, hoarse voice, great restlessness, and pain in the larynx and pharynx.

Associated with diphtheria, there may be severe inflammation of the parenchyma of the kidneys, with hæmorrhage. It may also produce albuminuria, which, however, only occurs in severe cases. Long continued and severe cases of this disease are followed by heart affections, (especially paralysis of the heart) and death. Upon post-mortem examination, the muscles of the heart are found pale, soft, and with fatty degeneration of their substance. In some cases I have known dangerous inflammation of the stomach to follow swallowing of the diphtheritic exudation, or extension of the affection through the œsophagus. One case of this kind I cured by the use of powdered *hydrastis canadensis*, in doses of a few grains, three times a day. There was in this case, as there generally is in such cases, ulceration of the mucous coat of the stomach, which was healed by the powdered *hydrastis canadensis*.

sis. Autopsies have also revealed more or less hyperæmia of the vascular linings and the substance of the brain and spinal cord. There is sometimes more or less softening in certain portions of the spine, and not infrequently capillary hæmorrhages are seen here and there. The nerves themselves may be softened and dotted with extravasated blood. The stage of incubation extends over some five or six days, or it may not be so long. We meet mild forms of the disease, and severe, septic forms of it, in the same epidemic, and sometimes in the same family. The mild form, which may be called *catarrhal diphtheria*, is very easily cured, and this has led some presumptuous young men to write in the various medical journals, essays upon diphtheria, with the rash assertion that it can always be cured by chloride of iron, quinia, and the chlorate of potassium, which are almost inert in the graver forms of this disease. The trouble commences with fever and sore throat. The temperature may rise as high as 105° F., but declines the fourth, or sixth day. At first, the tonsils and fauces look red and inflamed, but very soon they exhibit patches of the characteristic exudation which may be first upon one and then upon the other tonsil; seldom upon both at once.

This exudation very soon extends to the uvula, and to the palatine arch. The lymphatic glands of the jaw also swell. This fact may serve as a diagnostic point between diphtheria and inflammation of the throat. There is great languor, lassitude, headache, pain in the back and limbs and sometimes nausea. The disease may terminate, *under proper treatment*, not routine nonsense, in about ten or twelve days, or it may be cut short in five or six days. In many cases, especially in those treated routinely, a sudden rise of fever, with a rapid spread of the diphtheritic exudation takes place, exhibiting the fact that it is a severe case. This form is called croupous diphtheria. In many epidemics, this occurs at the very outset of the attack. In such cases the exudation rapidly thickens and extends in area, spreading upwards through the pharynx into the nasal cavities, attacking the eustachian tubes or the lachrymal ducts, and sometimes even the conjunctivæ. Or it extends downwards into the larynx, trachea and bronchi, and occasionally into the stomach. This exudation gradually changes its color to a dark brown or even to a black hue, emitting a very offensive odor. The submaxillary glands swell, the lymphatics enlarge still more and the urine is scanty, and albuminuria exists generally in proportion to the intensity of the disease. Digestion is often very much disturbed, the appetite fails, and nausea, and even vomiting take place, which last is often very troublesome in the latter stage, often continuing for weeks, or months after all other symptoms of the disease have disappeared. It may rise from reflected action from the brain, or be

the result of the diphtheritic condition of the stomach. In such cases the patient may die from paralysis of the brain. The septic form of the disease, which often terminates in gangrene, may always be known by the rapid and extensive breaking down of the tissues, by capillary hæmorrhages from the mucous membranes, and by the general blood-poisoning. In some epidemics, the disease shows a septic tendency at the very outset.

In the grave form, the false membranes appear upon a red, œdematous mucous membrane, with an ichorous discharge, which disorganises the parts it touches. Such discharges, be they either from the mouth or nose, emit a very offensive odor, and rapidly corrode the parts with which they come in contact. The lymphatic and submaxillary glands become very much enlarged, while the surrounding tissue also grows rather œdematous. The patient's face looks bloated, pale and wax-like, his pulse is feeble, quick, small and finally grows exceedingly weak, irregular and slow, and his temperature may be as high as 107° F., or it may be lower than usual. In this condition convulsions may take place, and be followed by death. This disease may be complicated with scarlet fever. It may complicate typhoid fever, pyæmia, puerperal fever, erysipelas, whooping-cough, measles and some other chronic diseases, especially when they occur in the dissipated.

SEQUELÆ.—These are paralysis of the soft palate, and sometimes of the extremities, eyes, larynx, ears, nose, or tongue.

DIAGNOSIS.—The mild forms of diphtheria might possibly be mistaken for catarrhal sore throat, in the first stage, but it can be easily distinguished as soon as the exudation takes place. It differs from aphthæ, in that it commences as minute vesicles and gradually forms ulcers without exudate on them. All the forms may be distinguished from simple croup by the exudation, and by the swelling of the glands.

PROGNOSIS.—Prognosis is generally favorable under proper pathological treatment, but under the old routine treatment, it is unfavorable in a large majority of grave cases and in many mild ones. One of the greatest dangers, if not met according to pathological indications, is the invasion of the larynx, and another is the risk of septic poisoning.

TREATMENT.—There is no specific for this or any other disease, as some young scribblers would have us believe. If we were to credit the vain babblers that are constantly wasting space in medical journals, we would be made to think that specifics had, at last been found for this dreadful scourge—quinia, muriate of iron, and the chlorate of potassium—none of which have any power over the graver forms of the disease. It is possible they may have some influence over the mild variety, but he who depends

upon them in the grave, septic forms of the disease, will meet with sad disappointment. I have found muriatic acid, properly diluted, say $\bar{5}$ 1 of it, to $\bar{5}$ 1 of water, very efficient when applied with a camel's hair pencil, in dissolving the diphtheritic membrane. It is probable that lactic acid, pure, or diluted with one part water, would also be a good application, applied locally, or with the spray apparatus. Where there are ulcers in the throat, and excessive salivation, gtt. 5, of nitric acid, given internally, and the 1st dec. dilution, applied to the ulcers, will prove beneficial. It may be given internally, well diluted with simple cold water, say gtt. 10 in $\bar{3}$ 1, of water. If the exudate is soft, and there is great inflammation, salicylic acid will do good service, in doses of gr 3 to 5, *ter die*. In mild cases of catarrhal character, belladonna, alternated with phytolacca, in doses of gtt. 3 to 5, each, alternated every three or four hours, will generally be sufficient internally. Powdered sulphur blown over the tonsils and palate, through a quill, three times a day, or the old wash of chlorate of potassium, or Listerine will probably be better. A wash of the diluted tincture of eucalyptus (50 per cent.) is a good application, and I alternate it with the permanganate of potassium. This has proved very successful in ordinary cases. In the malignant form, I use merc. cyan., (say merc. cyan., gr. 1, aqua pura, $\bar{5}$ 4, dose, a teaspoonful every three hours) until the most unfavorable symptoms give way. Merc. biniod. is also a remedy of intense action in the graver forms of the disease, the dose being about gr. 1-50, three times a day, well diluted with water. I use the biniodide of merc., as follows: biniod. merc. gr. 2, iodide of potassium $\bar{5}$ 2, aqua $\bar{3}$ 4, dose, a teaspoonful four times a day. This will not remain in the system as the other mercurials. In cases where the breath is very offensive, and where there are croupy symptoms, hoarse cough, extensive exudation of a dirty white or brown color, with ulceration under the deposit, great prostration, and feeble pulse, the iodide of arsenic, in doses of gr. 1-30 to 1-40, three or four times a day, will prove efficient in counteracting these symptoms, and aiding the above local applications in relieving the disease. A saucer of bromine water should be placed in the room of the patient, in all severe cases. Bromine, in doses of gtt. $\frac{1}{2}$ to 1, every four hours, is also a very active remedy in the worst forms of this disease. Ailanthus, in small doses of the tincture, say $\frac{1}{4}$ to $\frac{1}{8}$ every half hour, has proved valuable in many cases. In some cases, the local application of a diluted tinct. of sanguinaria has proved a valuable aid, diluted and applied with the spray apparatus. Carbolic acid, diluted, and used the same way, is also invaluable. The chloride of calcium is also an efficient remedy, given locally as follows: aqua chlorinii, $\bar{5}$ $\frac{1}{2}$; aqua distil., $\bar{5}$ 3; syrup simplex, $\bar{5}$ $\frac{1}{2}$, used as a gargle or with the spray apparatus.

Noma.—This malignant ulceration of the cheek commences in the form of a small blister, generally upon the middle of the cheek, or near the corner of the mouth, on the inside of the cheek. It is filled with a red or brown, turbid fluid, which very soon bursts, the blister then appearing as a small superficial ulcer, with a foul basis, which soon assumes a gangrenous character. Under this little blister, before it breaks, a small hard lump may be felt, which consists of infiltrated cellular tissue and adipose tissue, intensified. The downward metamorphosis goes quickly on. The gangrenous decomposition is rapid, and on the outside there appears an œdematous enlargement of the cheek, which may be pale or livid. Very often this ulcer is covered with a thick, dark crust, under which gangrenous destruction is progressing very rapidly. Very soon the greater part of the diseased side will be destroyed. The glands of the neck become enlarged and the face looks cacheptic and pale. The strength of the patient soon gives way, diarrhœa sets in, and death takes place from exhaustion. Or perhaps the gangrenous destruction will extend over the entire cheek, and hæmorrhage terminate the patient's miserable existence. The disease is mostly found in sickly children, or following scarlet fever, measles, typhus, and sometimes small pox. When it does appear in adults, it is mostly as puerperal fever in females, or in males or females after the abuse of mercury, or after typhus fever.

TREATMENT.—Arsenic is one of our most trustworthy remedies in combating this deadly disease. All of its symptoms show the profound sepsis of the blood and indicate a most powerful anti-septic remedy to meet it. The dose required is about gtt. 2 to 3, three or four times a day. The permanganate of potassium may be applied locally, say gr. 10 to 18 to $\bar{3}$ 1 of water. The arseniate of gold would be a good remedy in small doses of say gr. 1-50 or 1-60 ter die.

CHAPTER XVII.

DISEASES OF THE LARYNX AND ŒSOPHAGUS.

Bronchocele: Goitre.—This is a disease of the thyroid gland, which causes great hypertrophy. Simple hypertrophy may appear in young children, but goitre is a degeneration of this gland. It seems that this enlargement contains cysts, composed of a thick gummy or jelly-like material, of a brown or yellow color, called colloids. These colloids are either interspersed between the substance of the gland, or form separate oval appendages upon the gland, without involving the gland itself in the diseased process. In new-born infants, goitre consists in simple hypertrophy of either the entire gland or of one of its tubes, and may press upon the trachea and impede respiration. Some cases are on record where it was so great that it produced suffocation and death in a few days.

TREATMENT.—Egg shells, without the inner coating, dried thoroughly and pulverized finely, have proven effectual. Iodine and the iodides are the most successful remedies in my hands. Iodide of barium is very good, in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$ of the 2nd dec. trituration.

Œsophagitis.—This inflammation is most commonly the result of mechanical irritation or injury, such as the irritation of foreign substances, or arises from the action of some corrosive substance swallowed by the patient. Inflammation of the pharynx and stomach may spread to the Œsophagus, and so may cause violent inflammation of the lymphatic glands. It has been known to appear in the course of typhus fever, cholera, pyæmia, small pox and scarlet fever. These diseases may produce more or less inflammation and finally ulceration of the Œsophagus. Sometimes it goes into a chronic form, and produces dilatation of its calibre. Occasionally when inflammation of this organ is the result of corrosive or scalding substances, stricture may be produced from the contraction of the ulcers. This condition is very unpleasant.

SYMPTOMS.—One of the most constant and usual symptoms is painful deglutition, or in some cases, entire inability to swallow anything, the patient regurgitating his or her food all the time. This of course must prove fatal, if not soon relieved by proper treatment.

TREATMENT.—Aconite is the remedy for the acute form of the disease, and should be given in small doses, very frequently repeated, say aconite gtt. 10, aqua $\overline{3}$ 4; dose, a teaspoonful every half hour,

until the force of the circulation and the heat are subdued. If after giving aconite for several hours, there still remains a burning pain and cramp, and the food is ejected as soon as it reaches the larynx, gtt. 2 to 3 of the tincture of arsenic may be ordered every three or four hours, until this condition is changed for the better. Where the patient complains of a pressing pain, and a feeling as though a foreign body had lodged in the œsophagus, gtt. 1 to 3 of belladonna may be taken every three hours, until the symptoms are relieved. Where there is a burning sensation in the entire œsophagus, gr. 1 or 2 of the 1st dec. trit. of the bichromate of potassium may be tried every two hours, until it relieves. If the patient complains of an empty or weak sensation over the abdomen, small doses of tincture of phosphorus may be given three times a day.

Stenosis Œsophagi.—This is rare disease, and may be congenital or the consequence of morbid changes of adjacent organs, such as the glands of the neck. It may be the result of foreign substances of various kinds which have lodged in the act of swallowing and stuck fast, such as fungoid, carcinomatous and poly-poid growths. Again, it may result from a contraction produced by a cicatrix, causing stricture of the œsophagus. In some rare cases it results from contraction of the muscular layer of the œsophagus. This is called by writers septic stenosis.

SYMPTOMS.—The most noted symptom of all these forms of stenosis œsophagi, is difficult deglutition. If the stenosis comes gradually, the patient may only feel slight obstruction to the free passage of food of a solid character, which is obviated by drinking a little water, but as the stricture advances, the obstruction increases, and the food lodges and may be ejected.

TREATMENT.—This disease comes under the domain of surgery. Gelseminum may do good, given in doses of gtt. 20 to 25, twice a day.

Acute Laryngitis.—This is inflammation which may be limited, or may extend to the arytenoid cartilages, upon the epiglottis and into the trachea, causing redness and swelling of these parts. In some severe cases there is œdema of the larynx, or there may be hæmorrhagic infiltration of the mucous membrane and the submucous connective tissue. The symptoms of course correspond to these various complications. There is huskiness of voice and sometimes very great hoarseness. In severe cases, aphonia may supervene from the swelling of the vocal cords, and from more or less paralysis of the muscles of the larynx. In children, there is such interruption of the respiration that it resembles croup, which has led to the name of *pseudo-croup*. The swelling of the mucous membrane naturally narrows the glottis, hence the harsh, croupy cough and great difficulty in the respira-

tory effort. There may be a spasmodic cough, resembling whooping-cough, which is followed by a drawn inspiration and coughing of various varieties. This disease is often mistaken for croup. These various sounds are the results of greater or less swelling of the vocal cords and the parts around them. The mucous membrane at first may be somewhat dry, but it soon becomes moist, by an increased secretion in the inflamed parts, which at first may be clear, but later is slightly streaked with blood. It may finally change to a yellow color, from being mingled with pus cells. There is usually some pain in the larynx, and a very disagreeable feeling of dryness or irritation, as if some foreign substance had lodged in the parts. There may also be considerable pain in the act of deglutition from inflammation of the arytenoid cartilages. This disease may terminate in eight or ten days, or it may continue for weeks and become chronic and troublesome.

CAUSES.—A predisposition to this affection exists in many persons, especially in those who are cachectic and feeble and who keep themselves too heavily clad and too closely housed. The exciting causes are, cold air, dust, acrid vapors, straining the voice, wet feet, sudden exposure of the neck to a cold stream of air, catarrh, influenza and attacks of pharyngitis after using alcoholic drinks. It may also be the result of some constitutional diseases, as measles, typhus fever, syphilis and tuberculosis.

TREATMENT.—Aconite should always begin the treatment of the acute form. If the fever is high and the skin dry and hot, and if there is great restlessness, croupy cough, hoarse breathing and pain in the larynx, aconite should be given in small doses, say aconite gtt. 20, aqua ζ 4, dose a teaspoonful every half hour. I usually alternate it with gtt. 3 to 5 of sanguinaria. Where there is but slight fever, barking cough, headache and drowsiness, or sudden aphonia, gtt. 5 of the tincture of belladonna should be ordered every three hours, until the symptoms are relieved. If the cough is very husky, the voice hoarse, the cough croupy and respiration difficult, I use bromine, in doses of \mathcal{M} . $\frac{1}{2}$ to 1, every three hours, or perhaps it is best to make the 1st. dec. dilution, and give gtt. 3 or 4 of that, every three hours. If the above remedies do not give relief, gtt. 2 or 3 of bryonia, may be given every two hours, alternated with gtt. 10 of drosera.

Chronic Catarrhal Laryngitis.—The chronic form of this affection often results from neglect, or from badly treated cases of the acute form. It may arise from over-taxing the voice in speaking and singing, or it may follow chronic pharyngitis, especially in those who use spirits and tobacco. I know of a great many cases from the excessive use of tobacco.

SYMPTOMS.—There is usually injection of the mucous membrane,

with a kind of velvety sponginess of the lining tissue. In most cases, the vocal cords are thickened up, and sometimes their surface is granulated, and covered with dilated veins. Occasionally, I have noticed that there was follicular inflammation and œdema, ulceration of the mucous membrane, and in a few cases, extensive destruction of the parts. A kind of secondary chronic laryngitis is often found in old cases of syphilis, and here we observe ulceration, neoplasms and perichondritis. This condition renders the voice hoarse or husky, and produces a collection of phlegm in the throat that keeps the patient continually clearing it. The phlegm may be clear, viscid, profuse or ropy, with pus cells in it. There is generally also a hoarse cough may be more or less rawness, scraping, soreness and burning sensation in the larynx, which is much increased by speaking or singing.

TREATMENT.—Iodine and iodide of potassium are valuable, both locally applied and taken internally. A solution of nitrate of silver may be used, in the form of a spray, say gr. 2 to 3 to 5 of water. The iodide of arsenic is a valuable remedy, where there is destructive ulceration; the dose is quite small. I use the 1st dec. trit., in doses of gr. $\frac{1}{4}$ or $\frac{1}{8}$, as it is very acrid in substance, and must be used with care. If the phlegm is tough and stringy, the bichromate of potassium is indicated, in doses of gr. 1 to 2, three or four times a day, well dissolved in water. If ulceration is rapid, a solution of permanganate of potassium, gr. 5 to 5 of water, may be used with benefit with a spray apparatus, three times a day. If the cough is persistent, the tinct. of *sticta pulmonacea*, in doses of gtt. 5 to 10, is a valuable remedy. If this disease be from syphilis, *stillingia*, in doses of gtt. 10, is one of our best remedies, alternated with gold.

Croupous Laryngitis.—Croupous laryngitis causes an exudation of a fibrinous character which often lines the mucous membrane of the larynx like a real organized membrane, except that it is rather more loosely attached. This membrane allies the disease to diphtheritis, and in children causes the one to be mistaken for the other by young or ignorant physicians.

DIFFERENTIAL DIAGNOSIS.—It may be distinguished from diphtheria by inspection of the membrane, which in croup is a thin, tough, fibrinous-like substance, sticking to the fauces and larynx, while in diphtheria it is a thicker exudation, and is easily detached, leaving an ulcer beneath it, *which croup never does*. Croup, also, generally attacks the child suddenly, with a hoarse, dry cough, which may abate at morning and return at night again, and so may continue, if not relieved, for several days. After the cough continues for a time, the breathing becomes hoarse and saw-like, caused by the stuffed-up air passages. This difficulty in the respiratory effort increases from hour to hour. The child evinces great distress,

and is very restless, struggling terribly for air, and frequently rising up in bed and crying fiercely, until from exhaustion and the carbonized state of the blood, it falls to sleep. The face is at first suffused, but finally becomes pale, and eventually, if not relieved, cyanotic and covered with a cold sweat. The pulse, which at first is strong and quick, now becomes very frequently small and irregular, until finally the sufferer is relieved by death.

TREATMENT.—Acetic acid is a good remedy, and may be diluted so as to be used with the spray apparatus and given in small doses, while at the same time it is used locally. The tincture of iodine inhaled from hot water is also a good local remedy, and should not be forgotten. The acetic syrup of sanguinaria has proved the most valuable remedy with me, in doses of a teaspoonful every half or one quarter hour, until the patient vomits. I usually unite lobelia with it, so as to produce vomiting quickly. Bichromate of potassium is also an effective remedy, in doses of gr. $\frac{1}{4}$ to $\frac{1}{2}$, four times a day. The inhalation of bromine is also valuable. Aconite should be given where there is fever. I have succeeded well with alum in large doses of gr. 10.

Œdema of the Larynx.—This disease seems to consist of a serous or sero-purulent infiltration of the submucous tissue. It generally follows some inflammatory attack, and is always a secondary disease, either the result of catarrhal laryngitis spreading the inflammatory process down into the submucous connective tissue, or if it is connected with laryngeal diphtheria. It may also originate from chemical or mechanical irritants, from inflammation of any of the adjoining parts (as from wounds of the larynx), or from retro-pharyngitis, tonsillitis, pharyngeal diphtheria and also from parotitis. The most frequent causes are inflammation of the perichondrium of the laryngeal cartilages, tuberculosis, syphilitic poison, typhus fever, and carcinomatous ulcerations. It may occur from pyæmia, septicæmia, ulcerative endocarditis, variola, scarlatina, erysipelas and measles. It may extend over a considerable space, or be limited and more upon one side than the other. The inflammatory form consists of serous infiltration of the submucous connective tissue, or dropsy. It is either the result of general dropsy, in consequence of nephritis, malarial cachexia and amyloid degeneration of the kidneys, or it may be from a dropsical tendency to disease of the heart and emphysema and cirrhosis of the pulmonary tissue. Again it may be the result of compression of the superior and inferior thyroid or of the facial, internal jugular and innominate veins, by enlargement of the thyroid gland. The lymphatic and salivary glands may give rise to it, and so may aneurism of the aorta. The œdematous parts are either pale or pale-red, flabby and translucent.

SYMPTOMS.—The most notable symptom in either form of this

disease is laryngeal dyspnœa, which at first only affects the inspiration of air in the lungs, but as soon as the infiltration spreads to the aryteno-epiglottidean folds, to the epiglottis itself, and to the superior cords, this difference disappears. There is a hoarse, barking cough, and more or less hoarseness of the voice. It will prove fatal unless speedy relief is afforded.

TREATMENT.—In the inflammatory form, the internal administration of aconite, in gtt. $\frac{1}{2}$ doses, every half hour, will make a decided impression on the disease at the outset, and should not be forgotten. The tincture of apis mel. is a valuable remedy where the œdema is well marked, and may be given in doses of gtt. 5 to 8, every two hours. If this disease occurs in connection with general dropsy, arsenic is the remedy, in doses of gtt. 2 to 3, of the tincture (not Fowler's solution, but the saturated tincture in ninety-six per cent. of alcohol). If it occur with scarlatina or diphtheria, gtt. 2 to 5, of arum triphillum should be ordered every one or two hours. If the swelling is of a deep purple color, and the pain deep in the throat, and if the patient has a wild expression, belladonna is the remedy, in doses of gtt. 2, every hour. If the respiration is saw-like or rasping in sound, the cough dry and harsh, and expectoration tough and glairy, gtt. 5, of the tincture of sanguinaria should be given every hour, and acetic syrup well diluted, should be thrown on the parts with the spray apparatus, three or four times a day.

Tubercular Ulceration.—This form of ulceration of the larynx is most always associated with pulmonary tuberculosis, but it may precede it in some exceptional cases. It commences with slight hoarseness, especially on taking cold, but this trouble is often at first overlooked. The laryngoscope shows partial injection and swelling of the vocal organs. Sometimes there is anæmia of the mucous tissue, and perhaps paresis of the muscles themselves. Ulcers follow renewed catarrhal attacks, and may be limited or may rapidly spread to the glottis, epiglottis, ventricular bands and vocal cords, forming extensive ulcerations around the glottis. I have seen some cases that had destroyed the vocal cords, the epiglottis, and a large portion of the mucous covering of the larynx. In such conditions the voice is lost, or nearly so. Not only is there aphonia, but the cough is also without tone, and there is considerable difficulty in swallowing and much pain in the larynx.

DIAGNOSIS.—Ulceration presents no very distinct characteristics by which we can easily determine this form from syphilitic ulceration. We must depend for this upon the previous history of the case. We must know whether or not syphilis has existed previously, and and whether or not there are, or have been, any premonitory signs of phthisis pulmonalis.

PROGNOSIS.—Prognosis may generally be regarded as unfavorable. The progress of the disease may sometimes be slow, and if ulceration is not too extensive, if there is not too much increase in the circulation, and if there are no tubercles in the lungs, we may frequently prolong the life of the patient.

TREATMENT.—In cases of great accumulations of phlegm and ulcers, with excessive granulation, I order nitrate of silver locally gr. 1 to 2, $\frac{1}{2}$ of water, used in the spray apparatus, with small doses taken internally. If the ulcers are indolent and sero-purulent, gtt. 1 to 2 of the tincture of arsenic should be administered three times a day. If phthisis exists, the hypophosphites should be given—as directed under phthisis pulmonalis.

Spasm of the Glottis.—This is called by some writers infantile asthma, laryngismus stridulus, or laryngitis stridulosa, and this is its proper name.

SYMPTOMS.—It usually commences with slight attacks of dyspnoea, accompanied by a peculiar wheezing noise during the inspiratory effort, together with an anxious expression of the child's face. These attacks may not last long, and frequently occur at night. If not treated well, the spells increase in intensity and length. The child is often attacked with fright, crying, laughing, or a desire for drink, just as it is awaking from sleep. The inspirations are attended with a peculiar whistling, crowing, and hoarse sound. The child makes great effort to draw the air into the lungs through the spasmodically contracted glottis. Sometimes expiration is very difficult, and at times is suspended for awhile, causing great agony in the expression of the child's face, and great alarm to the parents. Sometimes there is a cold perspiration upon the child, the veins of the neck are much swollen, and the eyes look frightful indeed. The pulse may be small and intermitting, and all the symptoms are very alarming to the friends and parents of the child, and indeed, may prove fatal. These alarming symptoms may only continue two or three minutes, and then, with a loud, hoarse, crowing cry, the child again catches its breath. There seem to be no very great evidences of catarrh or of febrile manifestations. The child may have a great many of these attacks a day, and if not arrested, the disease may terminate in convulsions and death. Children between two and fourteen months of age, are most liable to croup.

TREATMENT.—The most reliable remedies are gelseminum and lobelia. The dose should be small of both, say gtt. 10, of lobelia (tinct.) and gtt. 3 to 4 of tinct. of gelseminum, repeated every hour, until the child becomes weak and is inclined to drowsiness. If there is any congestion to the head, belladonna, in doses of gtt. $\frac{1}{4}$ to $\frac{1}{2}$, every three hours, will bring relief. The bromide of sodium or ammonium, will do good service in some cases.

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